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SOLID WASTE DISPOSAL PRACTICES

ON PUBLIC LANDS

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SOLID WASTE DISPOSAL PRACTICES

ON

PUBLIC LANDS

Prepared
for
The State of California
Water Resources Control
Board
Contract #7-043-41

United States Department of the Interior
Bureau of Land Management
California State Office

Prepared by Stephen A Ratty 208 Staff Hydrologist 5-25-78 Date

Recommended by 208 Project Supervisor Date

Approved by Ed Hastey State Director 6/28/78 Date

May 1978

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INTRODUCTION

The disposal of solid waste materials on lands administered by the Bureau of Land Management (BLM) is one of many land uses for which a strong public need exists. The public is increasingly aware of the need for the safe disposal of waste materials in a manner that protects the environment from irreversible destruction and which allows for other land uses to be maintained unimpaired.

The BLM maintains a management framework for the safe disposal of solid waste materials. As the demand for other land uses increases, the proper selection of sites for solid waste disposal becomes more important. Therefore, BLM emphasizes the need for a thorough analysis and proper advance planning and design of proposed solid waste disposal sites.

The policies and procedures governing the disposal of solid waste materials on BLM lands are outlined. Waste disposal regulations and planning requirements imposed on the BLM by the Environmental Protection Agency are summarized and the current status of existing waste disposal sites is addressed. Existing BLM on-the-ground monitoring procedures are analyzed and recommendations for improvement under best management practices are presented.

This report was prepared with two objectives in mind. First, the increased national emphasis on the safe disposal of solid and hazardous waste materials and the ongoing drafting of new legislation in this area require that more stringent controls be placed on solid waste management. Second, this report is designed to serve as a solid waste management guide for BLM field personnel involved with the routine planning, design, operation and monitoring of solid waste disposal sites. This report analyzes and strives to improve current BLM practices of solid waste disposal on public lands in order to comply with the new regulations.

The ongoing revision of the regulations regarding the land disposal of solid and hazardous waste materials will require modifications in the procedures outlined in this report. This plan will be updated and revised as new regulations are promulgated.

PART I

BLM POLICY, REGULATIONS AND PERMITTING PROCEDURES GOVERNING THE DISPOSAL OF SOLID WASTE MATERIALS ON PUBLIC LANDS

SOLID WASTE DISPOSAL LEASES
UNDER THE RECREATION AND
PUBLIC PURPOSES ACT

When the Bureau of Land Management (BLM) receives requests concerning the availability of public lands for the disposal of solid waste materials, a detailed site evaluation is made by the BLM and reviewed by the Environmental Protection Agency prior to issuance of a lease. In some instances, a lease may be issued with an option to purchase lands used for waste disposal after the disposal site has been closed. A patent to those lands is granted after the abandoned disposal site has been developed for some public use (e.g., park).

The Recreation and Public Purposes Act of 1926 (43 U.S.C. 869) (R&PP Act) as amended, is the source of the BLM's authority to issue leases for sanitary landfill sites. These leases can be issued to States or local units of government under a special pricing program at the rate of 25 cents per acre per year with a minimum payment of $10.00 per lease.

The public is increasingly aware of the need for proper selection of sites for solid waste disposal to insure that the environment is not degraded. As a result, the BLM emphasizes the need for a thorough analysis and proper advance planning and design of proposed solid waste disposal sites. In addition, the BLM requires the application of the most advanced site maintenance technology in order to minimize impacts on the environment and to enhance the visual aesthetics of the site and surrounding lands.

PROCEDURES FOR GRANTING SOLID WASTE
DISPOSAL LEASES ON PUBLIC LANDS

The procedures which the BLM follows in granting a solid waste disposal lease are found in 43 CFR 2912.3-2 through 2912.3-4, "Leases for Solid Waste Disposal Sites". Included in this section are provisions of other applicable statutes regarding the safe disposal of solid waste materials:

(1) All new leases shall contain express stipulations requiring compliance with:

(a) "Guidelines for the Thermal Processing of Solid Wastes," 40 CFR 240 (39 FR 29328-29338), Environmental Protection Agency;

(b) "Guidelines for the Land Disposal of Solid Wastes," 40 CFR 241 (39 FR 29328-29338), Environmental Protection Agency;

(c) "Regulations for the Acceptance of Certain Pesticides and Pesticide Containers," 40 CFR 165 (39 FR 15236-15241), Environmental Protection Agency.

(d) State Water Resources Control Board, California Administrative Code, Title 23, Chapter 3, Subchapter 15; Waste Discharge Requirements for Nonsewerable Waste Disposal to Land.

(e) State Solid Waste Management Board, California Administrative Code, Title 14, Division 7, Chapter 1 through 5.

(2) Lease applicants shall include in the plans of development and management detailed descriptions of the methods and procedures to be employed for compliance with the above guidelines and/or regulations. The requirements in these guidelines delineate mandatory minimum standards of performance that must be followed. The recommended methods and procedures found in the guidelines are specific means for meeting the requirements. In all cases, plans must comply with state and local standards for the disposal of solid waste materials where they are more stringent. Alternate methods and procedures may be used to meet the requirements when approved by an authorized officer of the BLM as coordinated with applicable state and federal regulatory agencies.

(3) An authorized officer of the BLM, through concurrence with the EPA, may determine how compliance in meeting the requirements will occur for each disposal site. In making this determination the authorized officer must take into consideration applicable Federal, State and local, air and water pollution and solid waste disposal laws, regulations and plans.

(4) Leases for the disposal of permanent or long term hazardous wastes will not be granted.

Leases and respective plans of development and operation already in existence and lacking such specific stipulations shall be amended to require compliance with the above guidelines by lessees. In all cases the lease must stipulate that failure to comply with the guidelines shall constitute sufficient grounds for cancellation of the lease.

SOLID WASTE DISPOSAL REGULATIONS - FEDERAL

A brief summary of the federal regulations applicable to solid waste disposal facilities on public lands is presented below. These regulations contain minimum requirements and recommended procedures which suggest preferred methods for achieving the required standards. If techniques other than those recommmended (to meet the objectives of the requirements) are proposed by the operator of a solid waste disposal site, he must demonstrate to the BLM that the alternate techniques employed will satisfy the requirements. An authorized officer of the BLM may permit the use of alternate procedures if he determines that these will satisfy the requirements of the guidelines. This flexibility allows for the design of sanitary landfills which may require modification due to variations in local conditions (see Appendix, Illustration I).

When the authorized officer has permitted deviations from the recommended procedures, a special lease stipulation is added to reflect the modification. In all cases, the burden of proof in showing that alternative procedures will meet the requirements of the guidelines is the responsibility of the lease applicant. In cases where State or local solid waste disposal regulations are more stringent than the guidelines listed below, the more stringent will be followed by the lease applicant.

"Guidelines for the Thermal Processing of Solid Wastes," (40 CFR 240).

Residue and other solid waste products resulting from a thermal processing facility (e.g., municipal incinerator) must be disposed of in an environmentally acceptable manner. When land disposal practices are employed, practices must be in conformance with EPA Guidelines for the Land Disposal of Solid Wastes (40 CFR 241).

The BLM may permit the disposal of the following materials generated by thermal processing plants: (1) residential and commercial wastes normally processed at municipal-scale incinerators, (2) special wastes including certain bulky wastes (e.g., combustible demolition and construction debris, tree stumps, large timbers, furniture and major appliances), (3) digested and dewatered sludges from wastewater treatment facilities and raw sewage sludges and septic tank pumpings.

Hazardous wastes are not included under these regulations and are excluded from processing at thermal processing facilities. Pesticides and pesticide containers disposed of and treated by thermal processing plants are acceptable if they have been processed in accordance with the Federal Insecticide, Fungicide and Rodenticide Act of 1972 (P.L. 92-516) and 40 CFR 165 Guidelines. Compliance with the aforementioned guidelines is a prerequisite to disposing of thermal processing plant residues from these materials on public lands under the jurisdiction of the BLM.

"Guidelines for the Land Disposal of Solid Wastes," 40 CFR 241.

Types of Solid Waste Materials

The operator, in consultation with the BLM and EPA, must determine the types of solid waste materials that are to be accepted for disposal at the proposed site. In addition, "special handling" requirements for acceptable wastes must also be identified. The disposal site must be designed according to the types of waste materials that are to be accepted. Once the operator is granted a lease, he may only dispose of those wastes for which the disposal site has been designed. If the operator wishes to dispose of wastes other than those originally designated, he must demonstrate to the BLM that they can be satisfactorily disposed of within the design capability of the site. Alternatively, he may modify the facility to accept other kinds of waste materials.

Regular users of the land disposal site must be provided with a list of materials to be excluded. The BLM requires that this list be displayed at the entrance of the site. In general, all types of non-hazardous solid waste materials may be disposed of on pulic lands administered by the BLM. These wastes include garbage, refuse, moisture free sludges and other discarded solid materials from industrial, residential and commercial operations. Bulky wastes, such as automobiles, furniture and appliances are also acceptable if they are crushed before disposal. Dead animals may be included as long as the method of disposal is in compliance with state and local health laws.

The BLM may, under certain circumstances, accept for disposal of special wastes which are normally excluded. Usually, special wastes will be considered by BLM only when alternate methods of disposal cannot be found. The following special wastes require the specific approval of the BLM and EPA: infectious instututional wastes, bulk liquids and semi-liquids, sludges containing free moisture, highly flammable or volatile substances, raw animal manure and septic tank pumpings. When the use of a disposal site for disposal of the wastes listed above is

planned, a special assessment of the following items is required by the BLM: site characteristics, nature and quantities of waste and special design and operating precautions to be implemented to ensure safe disposal.

Site Selection

The BLM requires that every proposed solid waste disposal site be consistent with existing land-use plans and with all State and local health and safety requirements. In addition, all disposal sites must comply with State air-and water-quality standards. Each proposed disposal site must be evaluated with respect to the following:

(1) The hydrology of the site must be evaluated in order to minimize the impact on ground-water resources. Precipitation, evapotranspiration and other climatological conditions must be considered in the site selection process.

(2) Soil characteristics must be evaluated with respect to their effect on site operation and adequacy as a cover material.

Site Design

All design, construction and operating plans for solid waste disposal sites must be approved by a professional licensed civil engineer. These plans must be submitted to the BLM for review and approval prior to disposal site use. These plans must include the following information:

(1) The type and quantities of all wastes to be disposed of at the site;

(2) Initial and final site topography at contour intervals of five feet or less, land use and zoning within one quarter of a mile of the site location;

(3) Description of maintenance programs and provisions for monitoring and controlling decomposition gases and leachate.

Water quality

The location, design, construction and operation of the land disposal site must conform to the standards established under the Clean Water Act, as amended. The site must be located in an area where adequate protecton to surface and ground-water drinking sources is assured.

Air Quality

The design, construction and operation of the site must conform to air-quality standards establised under the Clean Air Act, as amended, and to State and local standards, whichever is more stringent. In addition, plans must include an effective dust control program.

Gas Control

Plans must address gas production resulting from decomposition to the extent that necessary steps are taken to control their movement and accumulation and prevent serious hazards to adjacent property owners and site users.

Site Operation

All site operation plans must include the following items: an effective litter control program through the use of litter fences; application of daily cover material to a depth of at least six inches; implementation of revegetation procedures to control erosion; and compaction of wastes and cover to minimize moisture infiltration.

Safety

The land disposal site shall be designed, constructed and operated in such manner to protect the health and safety of personnel associated with the operation. Pertinent provisions of the Occupational Safety and Health Act of 1970 and regulations promulgated thereunder apply.

"Regulations for the Acceptance of Certain Pesticides and Recommended Procedures for the Disposal and Storage of Pesticides and Pesticide Containers," 40 CFR 165

The following recommended procedures for the disposal of pesticides and pesticide containers apply to all pesticides. Containers which are registered for home and garden use are excluded. These pesticide containers should be securely wrapped in several layers of paper and deposited in a properly designed municipal solid waste disposal site. In addition, the open dumping and/or burning of pesticides and pesticide containers is prohibited on public lands administered by the BLM.

Organic Pesticides (except organic mercury, lead, cadmium and arsenic compounds)

These must be incinerated in a pesticide incinerator at the specified temperature/dwell time combination. Municipal solid waste incinerators may be used provided they meet the criteria of a pesticide incinerator. Solid residues resulting from incineration should be disposed of in accordance with Federal, State and local requirements. Municipal solid waste disposal facilities are an acceptable method of disposal in this case. If appropriate incineration facilities are not available, organic pesticides must be disposed of by burial in a specially designated landfill.

Metallo-organic pesticides (except organic mercury, lead, cadmium or arsenic compounds)

These compounds should first be subjected to an appropriate physical or chemical treatment for recovery of the heavy metals. These pesticides should then be incinerated in a pesticide incinerator and disposed of as described above. If appropriate incineration facilities are not available, these pesticides should be buried in a specially designated landfill.

Organic mercury, lead, cadmium, arsenic and all inorganic perticides

These pesticides must be chemically deactivated by conversion to non-hazardous compounds, the heavy metals recovered and the residue disposed of as described for Organic Pesticides. If chemical deactivation facilities are not available such pesticides should be encapsulated and buried in a specially designated landfill.

Group I Containers

Combustible containers which formerly contained organic mercury, lead, cadmium or arsenic compounds should be disposed of in a pesticide incinerator or buried in a specially designated landfill.

Group II Containers

Noncombustible containers which formerly contained organic or metallo-organic pesticides except organic mercury, lead, cadmium, and arsenic compounds should first be triple-rinsed. Then the rinsed containers should be punctured and

disposed of by burial in a sanitary landfill in conformance with State and local standards. Unpunctured containers should be disposed of in a specially designated landfill or incinerated.

Group III Containers

Both combustible and noncombustible containers, which formerly contained organic mercury, lead, cadmium, arsenic or inorganic pesticides and which have been triple-rinsed and punctured, may be disposed of in a sanitary landfill. Those containers which have not been rinsed should be encapsulated and buried in a specially designated landfill.

To date, the BLM has not licensed any special designated landfills. As a result, those pesticides and containers listed above are not accepted at existing solid waste disposal sites unless they have been incinerated or detoxified prior to disposal.

"Regulations and Proposed Criteria for the Classification of Solid Waste Disposal Facilities" 40 CFR 257 (39 FR 15236-15241), Environmental Protection Agency

Regulations regarding solid waste disposal facilities and proposed criteria for classification (40 CFR 257) were recently published in the Federal Register (43 CFR 25, February 6, 1978). The regulations contain minimum proposed criteria for determining if a landfill should be classified as posing no reasonable probability of adverse effects on health or the environment. The purpose of the criteria is to provide minimum national standards for the protection of health and the environment from the disposal of solid wastes.

These regulations require that the following actions be taken for all solid waste disposal sites:

(1) Inventory of all solid waste disposal sites by the States to determine which facilities do not comply with the criteria promulgated in 1978.

(2) Closing or upgrading within five years all open dumps or other disposal sites which are found to be in noncompliance with the criteria. A compliance schedule will be developed for all sites that need to be upgraded.

(3) Inventory of all surface disposal facilities located in underground water recharge areas to determine the extent of the impact that these sites could have on the underground water resources.

(4) Determination of the effects of solid waste disposal facilities on surface-water quality.

(5) Elimination of all solid waste disposal sites located in (a) environmentally sensitive areas, (b) 100-year flood plains, (c) permafrost areas, (d) critical habitat areas, (e) recharge areas of sole-source aquifers and (f) areas in active fault zones or in karst terrain.

(6) Monitoring of disposal sites to determine the presence and/or extent of ground-water contamination. Development of contingency plans and corrective actions to be taken in the event that an adverse impact on ground water is indicated by the monitoring.

(7) Elimination of all open burning activities unless a special variance is issued by a State for a particular area. Variances must be conditioned upon specific climatological and meteorological conditions.

(8) Minimization of the availability of food and harborage of disease-carrying vectors and analysis of other means to control these vectors.

Although the regulations cited above are proposed criteria and are subject to revision after the public comment period, it does not appear that they will be modified significantly. These regulations impose additional requirements which the BLM must adhere to. The impact of the implementation of the regulations on the BLM is not known at this time. In all likelihood, the BLM will work with the State in the inventory of all disposal facilities on public lands. The BLM will coordinate with the State to develop compliance schedules for solid waste disposal facilities found to be in violation of the proposed requirements. An implementation schedule and cost target estimate for conducting the required inventories are presented in Part III.

SOLID WASTE DISPOSAL REGULATIONS - STATE OF CALIFORNIA

The following state procedural and substantive regulations regarding the disposal of solid waste materials on public land apply to all BLM solid waste disposal lease sites. These regulations supplement the federal requirements described

previously and if more stringent, supersede numerous federal requirements for solid waste disposal practices as delineated in 40 CFR 240, 40 CFR 241,40 CFR 165 and 40 CFR 247.

California Administrative Code, Title 14, Division 7, Chapter 1 General Provisions.

66780. Each county, in cooperation with affected local jurisdictions, shall prepare a comprehensive waste management plan consistent with state policy for all waste disposal within the county before January 1, 1976. Plans may include elements providing for subregional solid waste management covering more than one county.

66784. No person shall establish sites for solid waste disposal, transfer station waste processing, or resource recovery not in conformance with the county solid waste management plan approved by the board.

California Administrative Code, Title 14, Division 7, Chapter 2, Planning Guidelines for the Preparation of Solid Waste Management Plans.

17170. The solid waste management plan must be flexible to accommodate future changes in economics and technology. It shall consider the incorporated areas as an integral part of the planning area and shall show any solid waste management plans of the cities and their relationship to the overall county plan. consideration shall be given to the feasibility of utilizing solid waste management systems operated on an area wide or regular basis.

17172. The plan shall identify existing and estimate future types, locations, characteristics, quantities and fluctuations of solid wastes on defined in Government Code Section 66719. The plan shall consider existing and estimate future types and quantities (measured or estimated), of wastes to be disposed of within the county and all wastes originating therein which are to be disposed of outside the county.

California Administrative Code, Title 14, Division 7, Chapter 3, Enforcement Program

66796. On or before July 1, 1977 there shall be designated within each county an enforcement agency to carry out the provisions of Chapter 3.

66796.10 The enforcement agency shall, (a) enforce all provions of this chapter and the regulations adopted thereunder pertaining

to the minimum standards for solid waste handling and disposal for the protection of air, water and land from pollution and nuisance, and for the protection of the public health. (b) coordinate action in solid waste handling and disposal with other federal, state and local agences and private persons, (c) request enforcement by appropriate federal, state, and local agencies of their respective laws governing solid waste storage handling and disposal and (d) develop, implement and maintain inspection enforcement and training programs.

66796.50 Any person who proposes to become an operator of a solid waste facility after August 15, 1977, shall file with the enforcement agency having jurisdiction over such facility an application for a solid waste facilities permit at least 120 days in advance of the date on which it is desired to commence operation.

After August 15, 1977, no operator of a solid waste facility shall make a significant change in the design or operation of any such facility except in conformance with the terms and conditions in a solid waste facility permit or revised permit issued to such operator.

66796.35. An enforcement agency or the solid waste management board in issuing or reviewing any solid waste facilities permit or in connection with any action relating thereto or authorized by this title, may investigate the operation by any person of a transfer/processing station, or disposal site, collection or handling equipment or storage area for solid wastes within its jurisdiction.

In such an investigation, the enforcement agency may require that any person who is or proposes to become an operator of a transfer/processing station, disposal site, collection or handling equipment or storage area for solid waste within its jurisdiction, shall furnish, under penalty of perjury, such technical or monitoring program reports or other reports as the enforcement agency may specify.

17606. Each operator of a disposal site shall obtain written approval from the enforcement agency having jurisdiction. In issuing such approval the conditions necessary to achieve compliance with the standards and the county plan shall be specified.

17616. No person shall hereafter engage or continue to engage in the operation of a disposal site for solid wastes in California without first filing an adequate Report of Disposal Site Information with the Enforcement Agency. Such report shall

include the following:

A descriptive statement of the manner of operation to be conducted at the site.

Information showing the type and relative quantities of wastes to be received. Indication of the approximate total acreage contained in the site and either the total estimated capacity in tons or cubic yards. A site life expectancy projection based on current and/or anticipated loadings is also required.

The general location of the proposed disposal site show on a map of at least the scale equivalent to a 1:24000 USGS topographic quadrangle. Such map shall show points of access to the site.

A plat plan which delineates the legal boundaries for which clear title is held by the applicant and/or any parcels which are leased. For all new site(s), copies of lease agreements shall be submitted and substantiation shall be shown that the disposal site owner is cognizant of the disposal operations and of the responsibilities assigned to the site owner by the standards.

Identification on the plat plan of the specific limits of the existing and planned disposal area(s) showing relationships to the property boundary lines and adjacent land uses surrounding the site.

A description of the sequence of development stages of the disposal site operation giving tentative implementation schedules for development, usage, site completion and closure. Describe the extent of change which will occur in areas which will be excavated for the placement of wastes or for the mining of cover materials.

A map showing the existing topographical contours of the property and proposed final elevations of the completed disposal site.

Information on the underlying soils geology, and ground-water occurrence, based on test berings conducted on the property.

Description of all surface and subsurface drains which are to be used to control water from areas on or adjacent to the disposal site. The location of and type of protective dikes, burns, and leves shall be described.

If leachate generation is anticipated, describe the method of monitoring, collection, treatment and necessary disposal.

Description of the location and type of monitoring wells which have been determined necessary to ascertain groundwater quality.

If known, describe the uses of the site after termination of disposal operations, including the time frames for implementation of such use.

Resume' of the management organizations which will operate the disposal site.

Compilation of conditions, criteria, and requirements established by the various approval agencies having jurisdiction over the disposal site.

California Administrative Code Title 23, Chapter 3, Subchapter 15. Waste Discharge Reguirements for Nonserverable Waste Disposal to Land.

All liquid and solid waste disposal sites must be situated, designed and operated to provide protection to the surface and ground-water so as to attain the highest water quality which is reasonable and to prevent nuisance prior to waste disposal at a new site or when a material change in the waste discharge is planned, the operator is required to file a report of waste discharge with the appropriate Regional Water Quality Control Board, to receive site classification, reclassification or waste discharge requirements.

The aforementioned state regulations for the disposal of solid waste materials apply to lease applicants who desire to dispose of solid waste materials on BLM administered lands. Compliance with these regulations is the responsiblity of all disposal site operators who apply for a state disposal site permit.

The BLM, pursuant to section 6001 of the Resource Conservation and Recovery Act, must comply with all state, interstate and local requirements, both substantive and procedural, including any requirement for permits, respecting control and abatement of solide waste. Therefore, the BLM requires that all R&PP lease applicants secure a permit from the State Solid Waste Management Board before any lease for a solid waste disposal site can be granted on public lands.

HAZARDOUS WASTE DISPOSAL POLICY

The disposal of hazardous wastes on public lands administered by the BLM is prohibited (43 CFR 2912.3-4), because, if a lessee were not in compliance with the stipulations of his lease agreement, the return of permanently contaminated lands to the jurisdiction of BLM could result.

On March 8, 1976, the Director of BLM issued guidelines with respect to the processing of applications for solid waste disposal sites under the Recreation and Public Purposes Act. The directive states that "the R & PP Act will not be used to authorize sites for the disposal or storage of permanent or long-term hazardous wastes. At this time, BLM has neither the manpower or the specialized expertise necessary to provide for monitoring and management of contaminated lands." The BLM in California concurs with this position on the disposal of hazardous wastes (see Appendix, Illustration II).

The Resource Conservation and Recovery Act of 1976 (P.L. 94-580) amends the Solid Waste Disposal Act to provide for a hazardous waste regulatory program to be implemented by each State. The hazardous waste program eliminates open dumping of solid waste as a disposal alternative, provides financial and technical assistance to States for planning advanced solid waste management programs, and provides authority for research, demonstration projects and studies. Guidelines for the development of State and county solid waste management plans that adequately address hazardous waste management will be promulgated within two years of the legislation. The BLM will re-evaluate the current policy regarding hazardous waste disposal on public lands after the regulations are promulgated.

BLM PROCEDURES FOR PROCESSING LEASE APPLICATIONS FOR SOLID WASTE DISPOSAL SITES

This section provides an overview of the steps taken by the BLM in processing a lease for a solid waste disposal site.

Before any lease for a disposal site can be issued, the BLM must first analyze the suitability of the lands for the proposed use. The following determinations must be made:

(1) Do local zoning, health and safety regulations allow the use of the lands for such a purpose?

(2) Do the acquisition and use of the lands have the written approval of the local government having legislative jurisdiction over the area?

(3) Is the acreage applied for commensurate with the acreage needed based on population?

(4) Is an alternate site available to the applicant which may better meet the selection criteria for a solid waste disposal site?

(5) Does the site conform and can it be made to conform with the adopted County Solid Waste Management Plan.

(6) Has the applicant secured a State Solid Waste Disposal Site permit from the Solid Waste Management Board for the proposed site.

Once the land has been classified as to its suitability for a solid waste disposal site, a more detailed analysis of the proposal is initiated. The procedure used in the selection of a disposal site is divided into three phases, allowing decisions to be made during the engineering and design of the landfill site.

Phase I - Regional Solid Waste Study

The purpose of the regional study is to select the proper landfill location based on the amount of waste generated in an area, haul distance from population centers, zoning regulations and a host of other items that need to be considered during the site selection process. An attempt should be made to coordinate new disposal site proposals with existing leases in an attempt to consolidate sites. This phase of the study may indicate that there are actually two or three potential sites that would be suitable.

Most of the regional study information has been compiled in the form of County Solid Waste Management Plans as required under sections 66780-66783 of Chapter 2, Division 7 of the California Administrative Code Title 14. The lease applicant must comply with the County Solid Waste Plan in order to obtain a State permit for solid waste disposal. Compliance with the county plan does not obviate the lease applicants responsibility to coordinate with the BLM during the Phase I study process.

The applicant's timely coordination with the BLM will expedite the selection process and assure commensurability with existing land-use management plans. After analysis, some potential

sites may be eliminated from further consideration due to other multiple-use constraints or needs identified in Management Framework Plans (MFP) for that area.

A list of typical reasons for site elimination includes the following:

(1) The land has been withdrawn for another use;

(2) The proposed use would directly conflict with the existing land use determined to be of greater public value;

(3) The site provides habitat for endangered species or is prime wildlife habitat;

(4) The lands are required for a more intensive public purpose;

(5) Mineral and multiple-use values outweigh the need for use as a disposal site.

Phase II - Proposed Site Study

Following the initial joint regional solid waste study and the BLM's tentative approval of the proposed site, the applicant prepares a lease application (see Appendix, Illustration III). During this phase of the process, the BLM responds to the lease application by performing a comprehensive study of the proposed site. The detailed analysis provides a mechanism whereby the environmenal impacts of the proposed action can be considered.

The applicant must furnish sufficient information pertaining to the characteristics of the site and the character and location of the planned development to enable the impacts on the environment to be adequately evaluated. Using this information the BLM prepares an Environmental Assessment Record (EAR) on the proposed action (see Appendix, Illustration IV).

The applicant should supply the following information for incorporation into the EAR:

(1) Location of the site and legal description;

(2) Topograghic map of the site showing

(a) Drainage pattern (surface and subsurface),

(b) Present vegetation,

(c) Present roads and structures;

(3) Description of soils, including

(a) Test holes and pits,

(b) Soil classifications,

(c) Depth to bedrock;

(d) Soil permeability

(4) Characteristics, including

(a) Wind velocity and direction,

(b) Precipitation characteristics (amounts and intensities);

(5) Description of ground- and surface-water resources including,

(a) Depth to natural ground-water table,

(b) Historical high level for groundwater table,

(c) Rate and direction of ground-water movement,

(d) Location of water-supply wells,

(e) Surface-water flow records of streams in the area,

(f) Surface and ground water quality data;

(6) Proposed layout of roads and facilities on the topographic map.

The EAR also incorporates information regarding impacts on visual quality associated with the proposed solid waste disposal site. A Visual Resources Contrast Rating procedure is used to assess visual impacts (BLM Manual 6320, Draft Release 6-54, November 7, 1975). The results of this analysis are used to make recommendations for the minimization of visual imacts.

In addition to preparing an EAR, the BLM prepares a Lands Report (LR) of the proposed site (see Appendix,Illustration V). The LR incorporates information from the EAR and

information supplied from other agencies. The LR is used in the final determination of whether the lease will be granted.

The LR includes the site specific operation and design stipulations of the proposed disposal facility identified in the EAR in order to assure compliance with Federal, State and local laws and ordinances regarding solid waste disposal.

The LR includes the following information which is used in determining whether the lease should be granted.

(1) Endangered, threatened or sensitive plant and animal species in the area;

(2) Cultural resource values;

(3) Floodplain delineation and flood hazard evaluation;

(4) Mineral reports for the site area;

(5) USGS water-resources reports for the site area;

(6) Visual resource values.

Throughout Phase II planning, the BLM solicits the comments of other agencies. The solid waste management representative of EPA is contacted as are the Soil Conservation Service, local Regional Water Quality Control Board, State Solid Waste Management Board, State Department of Health and local governmental agencies. When the proposed site application has been thoroughly reviewed and found satisfactory, the applicant is instructed to proceed with Phase III.

Phase III - Site Design and Operation Plan

The purpose of this phase is to permit the applicant to prepare a detailed plan of site design and plan of operation. These plans must adhere to stipulations listed in the Lands Report and must be approved by a licensed civil engineer. This procedure assures that all mitigating measures identified in the EAR will be implemented to ensure maintenance of environmental health, safety and visual quality.

The engineering design plan must include provisions for the minimization of visual impacts identified by the Environmental Assessment for Visual Resources (BLM Manual 8430 and Instruction Memo 78-29, Visual Resources Management update,

February 27, 1978). The BLM will require the lease applicant to submit a site simulation model with the engineering design plan in cases where lease approval is contingent upon maintaining and protecting visual resource values. The simulation model must include sketches of site appearance at various stages thoroughout the design life of the disposal area.

The final plan of operation is incorporated into the lease terms whereby compliance with EAR stipulations becomes a condition upon which the lease shall remain valid.

Phase III is considerably more detailed than the preceding phases of the planning process. This phase includes detailed drawings of engineering designs, erosion control methods, roads and facilities. The applicant who follows the procedures as stated above will save time and reduce expense since a significant portion of the cost of a sanitary landfill is tied up with Phase III engineering design. When the site design and operation plans are accepted and sent to EPA for review, the following actions take place:

(1) The BLM will issue a decision offering the applicant a lease calling for payment of rental fees and acceptance of special stipulations if necessary;

(2) Upon receipt of the executed lease and payment of rental fees the BLM issues the lease (see Appendix, Illustration VI).

PART II

BLM INVENTORY, MONITORING AND PROBLEM IDENTIFICATION OF SOLID WASTE DISPOSAL SITES

INVENTORY OF EXISTING SOLID WASTE DISPOSAL SITES ON PUBLIC LANDS

The following inventory of solid waste disposal sites on BLM lands was prepared through a review of existing R&PP case files and interviews with District staff personnel. Included in the inventories are a review of lease compliance status and a listing of trespass waste disposal sites on BLM lands.

The total number of active solid waste disposal lease sites at the time of this writing is 53 of which 28 are now in compliance with EPA regulations (see Table 1). Table 2 is a list of all leases which are either in noncompliance due to lease stipulation violations (7) or are currently pending field compliance checks (12). Table 3 lists those leases (6) for which other actions have been taken. Table 4 lists all new lease applications for solid waste disposal sites (7) pending approval. All solid waste disposal site locations are depicted on Plate I.

The following section provides a description of the compliance check procedure used by the BLM to monitor solid waste disposal site performance. In addition, an explanation of trespass dump sites is presented.

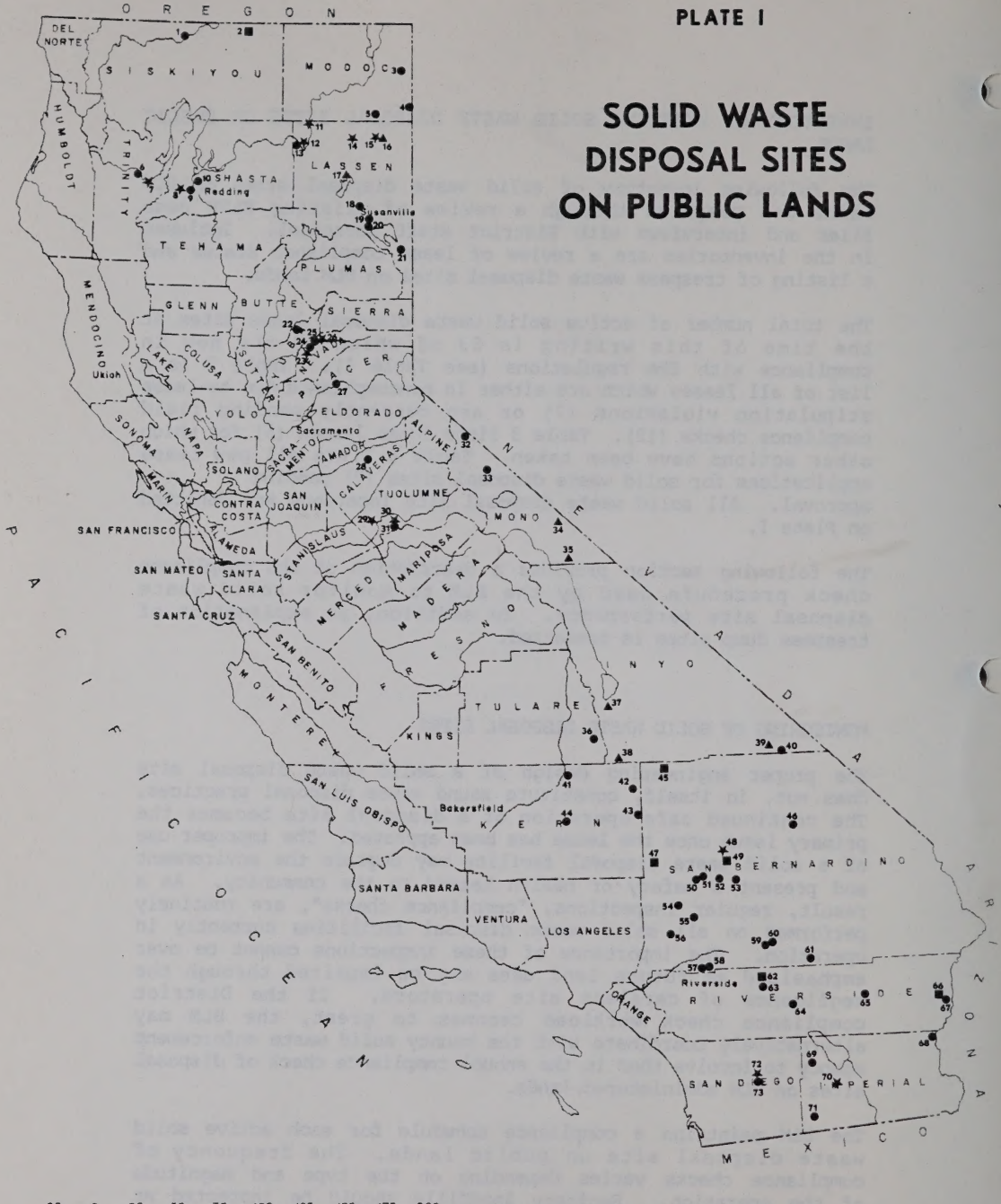
MONITORING OF SOLID WASTE DISPOSAL SITES

The proper engineering design of a solid waste disposal site does not, in itself, constitute sound waste disposal practices. The continued safe operation of a disposal site becomes the primary issue once the lease has been approved. The improper use of a solid waste disposal facility may degrade the environment and present a safety or health hazard to the community. As a result, regular inspections, "compliance checks", are routinely performed on all solid waste disposal facilities currently in operation. The importance of these inspections cannot be over emphasized as future land uses may be impaired through the negligence of careless site operators. If the District compliance check workload becomes to great, the BLM may alternatively coordinate with the county solid waste enforcement agency to involve them in the annual compliance check of disposal sites on BLM administered lands.

The BLM maintains a compliance schedule for each active solid waste disposal site on public lands. The frequency of compliance checks varies depending on the type and magnitude of the operation. Sanitary landfills should be inspected at

PLATE I

SOLID WASTE DISPOSAL SITES ON PUBLIC LANDS



LEGEND

- 19● Solid Waste Disposal Lease Sites (Active)
- 45■ Solid Waste Disposal Lease Sites (Other Actions)
- 17▲ Solid Waste Disposal Lease Applications Pending Approval
- 48✱ Trespass Waste Disposal Sites

PLATE I LEGEND
DISPOSAL SITE
LOCATIONS *

COUNTY	MAP NUMBERS	LEGAL DESCRIPTION
SISKIYOU	1	T. 47N., R.6W., M.D.M., Sec. 29
SISKIYOU	2	T.47N., R.1E., M.D.M., Sec. 4. portions of
MODOC	3	T.43 N., R.16E., M.D.M., Sec. 3, Portions of Lots 3&4
MODOC	4	T.40N., R, 17E., M.D.M. Sec. 21
MODOC	5	T.39N., R.13E., M.D.M., Sec. 11
TRINITY	6	T. 33N.,R.11W., M.D.M., Sec. 12 lot 58
TRINITY	7	T.32N., R.10W. M.D.M., Sec. 1, 10 acres
SHASTA	8	T. 32N., R. 6W., M.D.M. Sec. 30
SHASTA	9	T. 32N., R.5W., M.D.M., Sec. 30, Portions Lots 8&15
SHASTA	10	T.33N., R.5W., M.D.M., Sec. 35
LASSEN	11	T.38N., R.7E., M.D.M., Sec. 5
LASSEN	12	T.36N., R.6E., Sec. 4

* The legend for Plate I includes all disposal sites listed in Tables 1 through 5 (in compliance, pending compliance check, other actions, new leases and trespasses).

PLATE I LEGEND (continued)

COUNTY	MAP NUMBER	LEGAL DESCRIPTION
LASSEN	13	T.36N., R.6E., M.D.M., Sec. 6
LASSEN	14	T.37N., R.11E., M.D.M., Sec. 14
LASSEN	15	T.37N., R.13E., M.D.M., Sec. 11
LASSEN	16	T.37N., R.13E., M.D.M., Sec. 11
LASSEN	17	T.33N., R.11E., M.D.M., Sec. 15
LASSEN	18	T.30N., R.12E., M.D.M., Sec. 22
LASSEN	19	T.29N., R.13E., M.D.M., Sec. 19
LASSEN	20	T.29N., R.13E., M.D.M., Sec. 19, and Sec. 30
LASSEN	21	T.26N., R.16E., M.D.M., Sec. 10,
YUBA	22	T.19N., R.6E., M.D.M., Sec. 34
NEVADA	23	T.17N., R.7E., M.D.M., Sec. 24, 5 acres
NEVADA	24	T.17N., R.7E., M.D.M., Sec. 24
NEVADA	25	T.17N., R.8E., M.D.M., Sec.5, portion of lot 11

PLATE I LEGEND (continued)

COUNTY	MAP NUMBER	LEGAL DESCRIPTION
NEVADA	26	T.17N., R.8E., M.D.M., Sec. 5, 2.9 acres
PLACER	27	T.13N., R.10E., M.D.M., Sec. 3, lot 10
CALAVERAS	28	T.6N., R.13E., M.D.M., Sec. 14,
TOULUMNE CHINESE	29	T.1S., R.14E., M.D.M., Sec. 17
TOULUMNE (GROVELAND COMMUNITY SITE)	30	T.1S., R.16E., M.D.M., Sec. 33, 10 acres
TOULUMNE	31	T.1S., R.16E., M.D.M., Sec. 33 portion of lots 3,5,6 Big Oak Flat Area
MONO	32	T.8N., R.23E., M.D.M., Sec. 9, lot 3
MONO	33	T.5N., R.25E., M.D.M., Sec. 28
MONO	34	T.1S., R.32E., M.D.M., Sec. 32
MONO	35	T.5S., R.33E., M.D.M., Sec. 9
TULARE	36	T.22S., R.36 E., M.D.M., Sec.20

PLATE I LEGEND (continued)

COUNTY	MAP NUMBER	LEGAL DESCRIPTION
INYO	37	T.19S., R.37E., M.D.M., Sec. 22
INYO	38	T.24S., R.38E., S.B.M., portion of Sections 21 and 22
INYO	39	T.21N., R.6E., S.B.M., Sec. 23
INYO	40	T.20N., R.7E., S.B.M., Sec.12
KERN	41	T.25S., R.33E., M.D.M., Sec. 35
KERN	42	T.27S., R.39E., M.D.M., Sec. 12
KERN	43	T.29S., R.40E., M.D.M., Sec. 35, portion of lot 12
KERN	44	T.30S., R.33E., M.D.M., Sec. 15
SAN BERNARDINO	45	T.25S., R.43E., M.D.M., Sec. 18, lot 5, N1/2 of lot 4
SAN BERNARDINO	46	T.13N., R.9E., S.B.M., Sec. 7
SAN BERNARDINO	47	T.10N., R.6W., S.B.M., Sec. 15
SAN BERNARDINO	48	T.11N., R.2E., S.B.M.
SAN BERNARDINO	49	T.10N., R.2E., S.B.M., Sec.22

PLATE I LEGEND (continued)

COUNTY	MAP NUMBER	LEGAL DESCRIPTION
SAN BERNARDINO	50	T.9N., R.1W., S.B.M., Sec.31 and Sec. 32
SAN BERNARDINO	51	T.9N., R.1W., S.B.M., Sec. 30
SAN BERNARDINO	52	T.8N., R.1E., S.B.M., Sec. 2, Lot 3
SAN BERNARDINO	53	T.8N., R.3E., S.B.M., Sec. 10 and Sec. 15
SAN BERNARDINO	54	T.6N., R.4W., S.B.M., Sec. 23
SAN BERNARDINO	55	T.5N., R.2W., S.B.M., Sec. 29
SAN BERNARDINO	56	T.3N., R.5W., S.B.M., Sec. 13
SAN BERNARDINO	57	T.1S., R. 2W., S.B.M., Sec. 26
SAN BERNARDINO	58	T.1S., R.2W., S.B.M., Sec. 26
SAN BERNARDINO	59	T.2N., R.6E., S.B.M., Sec. 29
SAN BERNARDINO	60	T.2N., R.6E., S.B.M., Sec. 20, 21,28 and 29, portions of
SAN BERNARDINO	61	T.1S., R.10E., S.B.M., Sec. 5

PLATE I LEGEND (continued)

COUNTY	MAP NUMBER	LEGAL DESCRIPTION
RIVERSIDE	62	T.2S., R.5E., S.B.M., Sec. 34
RIVERSIDE	63	T.3S., R.5E., S.B.M., Sec. 26
RIVERSIDE	64	T.5S., R.8E., S.B.M., Sec. 22
RIVERSIDE	65	T.4S., R.15E., S.B.M., Sec. 33, and Sec. 34
RIVERSIDE	66	T.5S., R.22E., S.B.M., Sec. 25
RIVERSIDE	67	T.5S., R.23E., S.B.M., Sec. 31, lots 1, 2, 3,
IMPERIAL	68	T.9S., R.21E., S.B.M., Sec. 15
IMPERIAL	69	T.11S., R.9E., S.B.M., Sec. 12
IMPERIAL	70	T.13S., R.12E., S.B.M., Sec. 17
IMPERIAL	71	T.16S., R.9E., S.B.M., Sec. 13
SAN DIEGO	72	T.12S., R.4E., S.B.M., Sec. 33
SAN DIEGO	73	T.13S., R.4E., S.B.M., Sec. 9

least once a year (BLM Manual Section 2912.25D). The frequency of inspection is determined at the time the lease is granted and is stipulated in the lease agreement. Leases granted for transfer stations usually do not require an annual inspection.

Illustrations VII and VIII (see Appendix) are the compliance forms used by the BLM to evaluate solid waste disposal activities. When a compliance inspection is conducted, the BLM checks to see if the lessee is adhering to terms and conditions of the lease. If terms and conditions have not been met, the lessee is contacted and given the opportunity to take corrective action. In cases where the lessee fails to agree to a compliance schedule, steps are taken to cancel the lease. The current compliance status of all R&PP leases is described in Tables 1 through 4.

The proper operation of a solid waste disposal site is a benefit to the community. Most solid waste disposal facilities, if properly managed, can be returned to the BLM in an environmentally sound condition and can be put to other uses. Many sanitary landfills, upon completion, may be used as parks or other recreation facilities by counties or local units of government. If the necessary steps have been taken to protect the air and water resources in the area of a solid waste disposal site, subsequent land uses will not be impaired. Poorly managed sites create problems for the BLM in that subsequent uses may be severly limited or entirely restricted.

TRESPASS WASTE DISPOSAL ON PUBLIC LANDS

Trespass dumping on public lands describes those activities which either violate R&PP lease stipulations or constitute unlicensed disposal of waste materials on BLM lands. A survey of all BLM California Districts has been conducted to identify current trespass solid waste disposal activities. The results of the survey indicate that trespass dumping continues to be a problem in some areas. (Trespass waste disposal sites are depicted on Plate I). Table 5 lists trespass dumpsites identified in the trespass inventory. A brief description of the disposal activity is provided for each site identified.

When trespass dumping results from noncompliance with R&PP lease stipulations, steps are taken to bring the site up to standard. Action has already been taken to assure that trespass dumps resulting from noncompliance are brought into compliance and/or closed by lease revocation. The BLM has little control over unauthorized solid waste disposal

Table 1

Solid Waste Disposal Sites In Compliance With EPA Regulations (February 1978)

COUNTY	Map Symbol	Legal Description	Acreage	Date of Lease (L) or Sale (S)	Terms of Lease	Type of Operation	Area Served
Calaveras	28	T.6N., R.13E., M.D.M., Sec. 14	10	6/1/60 (L)	20 years	Transfer Station	Wilseyville area pop. 2500
Imperial	68	T.9S., R.21E., S.B.M., Sec. 15	40	1/10/66 (L)	20 years	cut/fill	Palo Verde area pop. 1500
Imperial	69	T.11S., R.9E., S.B.M., Sec. 12	320	12/1/65 (L)	20 years	cut/fill	Salton Sea area pop. 1000
Imperial	71	T.16S., R.9E., S.B.M., Sec. 13	40	12/1/65 (L)	20 years	cut/fill	Ocotillo area pop. 2000
Inyo	40	T.20N., R.7E., S.B.M., Sec. 12	29.4	12/23/72 (L)	5 years	Sanitary Landfill	Tecopa area
Kern	41	T.25S., R.33E., M.D.M., Sec. 35	20	12/18/70 (L)	20 years	cut/fill	Kernville area pop. 5000
Kern	42	T.27S., R.39E., M.D.M., Sec. 12	40	9/25/68 (L)	20 years	cut/fill	Ridgecrest pop.>7,000
Lassen	13	T.36N., R.6E., M.D.M., Sec. 6	20	2/25/63 (L)	20 years	Converted to Transfer station	Fall River & Pittville Communities pop. 1500
Lassen	20	T.29N., R.13E., M.D.M., Sec. 19, and 30	160	7/1/73 (L)	25 years	Sanitary Landfill	Susanville Area
Lassen	19	T.29N., R.13E., M.D.M., Sec. 19	40	8/8/57 (S)		Sanitary Landfill	Jameville Johnstonville Area

Table 1 (continued)

COUNTY	Map Symbol	Legal Description	Acreage	Date of Lease (L) or Sale (S)	Terms of Lease	Type of Operation	Area Served
Mono	33	T.5N., R.25E., M.D.M., Sec. 28	40	5/1/74 (L)	20 years	Sanitary Landfill	Bridgeport area
Placer	27	T.13N., R.10E., M.D.M., Sec. 3, lot 10	39.4	12/23/65 (L) Amended 1/23/75	20 years	Sanitary Landfill	Forest Hill Community pop. 1000
Riverside	63	T.3S., R.5E., S.B.M., Sec. 26	640	4/27/64 (L)	20 years	Sanitary Landfill	Edom Hill Palm Springs area pop.> 30,000
Riverside	64	T.5S., R.8E., S.B.M.. Sec. 22	640	12/1/2 (L)	20 years	Sanitary Landfill	Indio-Coachella Valley area pop. 50,000
Riverside	64	T.5S., R.8E., S.B.M., Sec. 22	640	12/12 (L)	20 years	Sanitary Landfill	Indio-Coachella Valley area pop. 50,000
Riverside	67	T.5S., R.23E., S.B.M., Sec. 31, Lots 1, 2, 3	254.6	3/21/63 (S)		Dumpsite/park	Blythe pop. 6000
San Bernardino	56	T.3N., R.5W., S.B.M., Sec. 13	80	9/21/64 (L)	20 years	Sanitary Landfill	Hesperia pop. 6000
San Bernardino	59	T.2N., R.6E., S.B.M., Sec. 29	20	9/3/65 (L)	20 years	cut/fill	Landers pop. 1000
San Bernardino	51	T.9N., R.1W., S.B.M., Sec. 30	160	7/12/63 (S)		Dumpsite/park	Barstow

Table 1 (continued)

COUNTY	Map Symbol	Legal Description	Acreage	Date of Lease (L) or Sale (S)	Terms of Lease	Type of Operation	Area Served
San Bernardino	57	T.1S., R.2W., S.B.M., Sec. 26	40	2/5/63 (S)		Dumpsite/park	Yucaipa pop. 6000
San Bernardino	46	T.13N., R.9E., S.B.M., Sec. 7	40	6/17/63 (S)		Dumpsite/park	Baker pop.< 1,000
San Bernardino	58	T.1S., R.2W., S.B.M. Sec. 26	520	3/13/64 (S)		Dumpsite/park	Yucaipa pop. 6000
San Diego	73	T.13S., R.4E., S.B.M., Sec. 9	80	7/5/68 (L)	25 years	Sanitary Landfill converted to Transfer Station	Julian pop. 1000
Shasta	10	T.33N., R.5W., M.D.M., Sec. 35	145	9/24/69 (L)	5 years	Sanitary Landfill	Buckeye Community pop. 16,000
Shasta	9	T.32N., R.5W., M.D.M., Sec. 30, portions of lots 8 and 15	5	2/6/63 (L)	20 years	Converted to Transfer Station	Shasta Community
Siskiyou	1	T.4N., R.6W., M.D.M., Sec. 29	1 2 .5	5/22/62 (L)	20 years	Transfer Station	Community of Hornbrook pop. 270
Tulare	36	T.22S., R.36E., M.D.M., Sec. 20	10	1/1/63 (L)	20 years	cut/fill	Kennedy Meadows pop. 200
Tuolumne	31	T.1S., R.16E., M.D.M., Sec. 33, portions of lots 3, 4, 5 Big Oak Flat Area	10	6/14/67 (L)	25 years	Modified Sanitary Landfill	Groveland community pop.< 1,000

Table 1 (continued)

COUNTY	Map Symbol	Legal Description	Acreage	Date of Lease (L) or Sale (S)	Terms of Lease	Type of Operation	Area Served
Yuba	22	T.19N., R.6E., M.D.M., Sec. 34	40	3/1/68 (L)	25 years	Sanitary Landfill	Challenge, Woodleaf & Brownsville

Table 2

Solid Waste Disposal Sites Not In Compliance With EPA Regulations or Pending Compliance Check (February 1978)

COUNTY	Map Symbol	Legal Description	Acreage	Date of Lease (L) or Sale (S)	Terms of Lease	Type of Operation	Area Served	Remarks
Kern	43	T.29S., R.40E., M.D.M., Sec. 35, portion of lot 12	69	11/1/75 (L)	20 years	Transfer Station	Randsburg	Compliance Check Pending
Kern	44	T.30S., R.33E., M.D.M., Sec. 15	1.75	10/1/75 (L)	10 years	Transfer Station	Twinoak Loraine area pop.>100	Compliance Check Pending
Lassen	21	T.26N., R.16E., M.D.M., Sec. 10	20	1/5/66 (L)	20 years	Sanitary Burn and Fill	Herlong community pop.< 1000	Noncompliance Being converted to sanitary landfill
Modoc	3	T.43N., R.16E., M.D.M., Sec. 3, portions of lots 3 and 4	22.7	11/25/70 (L)	25 years	Sanitary landfill	Tule Mountain and likely community pop.<500	Noncompliance
Modoc	5	T.39N., R.13E., M.D.M., Sec. 11	22.5	8/1/67 (L)	20 years	Sanitary Landfill	Lake City surrounding area pop.<500	Noncompliance May convert to drop box
Modoc	4	T.40N., R.17E., M.D.M., Sec. 21	22.5	11/28/67 (L)	25 years	Sanitary Landfill	Eagleville community pop. <500	Noncompliance-Pending Compliance Check
Mono	32	T.8N., R.23E., M.D.M., Sec. 9, Lot 3	43.6	5/1/74 (L)	20 years	Sanitary Landfill	Coleville Walker area	Noncompliance
Nevada	24	T.17N., R.7E., M.D.M., Sec. 24	5	4/1/75 (L)	25 years	Transfer Station	Birchville area pop.	Compliance Check

Table 2 (continued)

COUNTY	Map Symbol	Legal Description	Acreage	Date of Lease (L) or Sale (S)	Terms of Lease	Type of Operation	Area Served	Remarks
Nevada	25	T.17N., R.8E., M.D.M., Sec. 5, portion of lot 11	2.9	3/17/75 (L)	25 years	Transfer Station	No San Juan area pop. 900	Compliance Check Pending
Riverside	65	T.4S., R.15E., S.B.M., Sec. 33 and 34	160	4/1/75 (L)	20 years	Sanitary Landfill	Desert Center Eagle Mt. area pop. 5000	Compliance Check Pending
San Bernardino	61	T.1S., R.10E., S.B.M., Sec. 5	71	4/1/68 (L)	25 years	cut/fill	29-Palms pop.> 2000	Compliance Check Pending
San Bernardino	53	T.8N., R.3E., S.B.M., Sec. 10 and 15	40	10/26/65 (L)	20 years	Landfill	Newberry pop. 1000	Compliance Check Pending
San Bernardino	54	T.6N., R.4W., S.B.M., Sec. 23	80	2/28/66 (L)	20 years	Landfill	Oro Grande	Compliance Check Pending
San Bernardino	50	T.9N., R.1W., S.B.M., Sec. 31 and 32	480	4/4/75 (L)	25 years	Sanitary Landfill	Barstow pop. 23,000	Compliance Check Pending
San Bernardino	60	T.2N., R.6E., S.B.M., Sec. 20, 21, 28 and 29, portions of	638	4/10/75 (L)	25 years	Sanitary Landfill	Joshua Tree Morango Valley	Compliance Check Pending
San Bernardino	52	T.8N., R.1E., S.B.M., Sec. 2 Lot 3,	80	3/12/63 (S)		Dumpsite/park	Daggett pop.600	Compliance Check Pending

Table 2 (continued)

COUNTY	Map Symbol	Legal Description	Acreage	Date of Lease (L) or Sale (S)	Terms of Lease	Type of Operation	Area Served	Remarks
San Bernardino	55	T.5N., R.2W., S.B.M., Sec. 29	80	3/13/64 (S)		Dumpsite/park	East Apple Valley and Lucern Valley Area	Noncompliance
City of Susanville	18	T.30N., R.12E., M.D.M., Sec. 22	80	2/20/59 (S)		Sanitary Landfill	Susanville	Noncompliance Case sent to Washington
Trinity	6	T.33N., R.11W., M.D.M., Sec. 12 Lot 58	5	9/17/63 (L)	20 years	Dumpsite Sanitary Landfill	Junction City	Compliance Check Pending

Table 3

Solid Waste Disposal Sites - Other Actions

COUNTY	Map Symbol	Legal Description	Acreage	Date of Lease (L) or Sale (S)	Terms of Lease	Type of Operation	Area Served	Remarks
Siskiyou (City of Dorris)	2	T.47N., R.1E., M.D.M., Sec. 4	10	10/9/63 (L)	20 years	Sanitary Lanfill	City of Dorris Butte Valley pop. 1500	Pending Cancellation of lease
Riverside	62	T2S., R.5E., S.B.M., Sec. 34	200	13/12/63 (S)		Not in use as a Sanitary Landfill	Desert Hot Springs	Plans for recreation area in FY 78
Riverside	66	T.5S., R.22E., S.B.M., Sec. 25	80	3/21/63 (S)		Not in use as a Sanitary Landfill	Blythe	Noncompliance through non-use pending D.O.
San Bernardino	49	T.10N., R.2E., S.B.M., Sec. 22	40	8/20/64 (L)	10 years	Landfill	Yermo pop. 1000	Lease terminated
San Bernardino	47	T.10N., R.6W., S.B.M., Sec. 15	30	4/19/65 (L)	20 years	Landfill	Kramer Junction pop. 1500	Site closed Pending DO report
San Bernardino	45	T.25S., R.43 E., M.D.M., Sec. 18, Lot 5, N 1/2 of lot 4	48	1/1/66 (L)	10 years	cut/fill	Argus pop. 3000	Lease Expired

Table 4
Solid Waste Disposal Lease Applications Pending Approval (February 1978)

COUNTY	Map Symbol	Legal Description	Acreage	Type of Operation	Application Filed
Inyo	37	T.19S., R.37E., M.D.M., Sec. 22	20.0	Sanitary Landfill	12/16/77
Inyo	38	T.24S., R.38E., MDM, portion of Section 21 and 22	18.18	Sanitary Landfill	5/4/77
Inyo	39	T.21N., R.6E., MDM, Sec. 23	40	Sanitary Landfill	5/4/77
Lassen	17	T.33N., R.11E., MDM, Sec. 15	10	Sanitary Landfill	4/25/77
Lassen	16	T.37N., R.13E., MDM, Sec. 11	10	Sanitary Landfill	4/25/77
Mono	35	T.5S., R.33E., M.D.M., Sec. 9.	10	Sanitary Landfill	2/4/76
Mono	34	T.1S., R.32E., M.D.M., Sec. 32	10	Sanitary Landfill	2/4/76

TABLE 5
TRESPASS DUMP INVENTORY

County	Map Number	Legal Description		Remarks
Tuolumne (Groveland community site)	36	T.1S., R.16E., Sec.33, M.D.M., 10 acres	R&PP Lease	People dump off of Jack-ass road when the site is closed. The site is in the headwaters of a drainage.
Tuolumne Chinese Camp	29	T.1S., R.14E., M.D.M., Sec. 17	Open dump	Continued dumping on unleased site.
Nevada	26	T.17N., R.8E., M.D.M., Sec. 5. 2.9 acres	R&PP Lease	A trespass dump site which was converted to a transfer station; never cleaned up or buried refuse that was dumped in the past.
Nevada	23	T.17N., R.7E., M.D.M., Sec. 24, 5 acres	R&PP Lease	A trespass dump which was converted to a transfer station; never cleaned up or buried refuse that was dumped in the past.

Table 5 (continued)

County	Map Number	Legal Description		Remarks
Trinity (Douglas City)	7	T.32.N., R.10W., M.D.M., Sec. 1, 10 acres	R&PP Lease Cancelled	Open dumping still occurring; need to cover waste dumped in the past.
Lassen	14	T.37N., R.11E., M.D.M., Sec. 14	Open Dump	Unauthorized dumping on an unleased site.
Lassen	15	T.37N., R.13E., M.D.M., Sec. 11	Open Dump	Unauthorized dumping on an unleased site: lease applied for.
Lassen	12	T.36N., R.6E., M.D.M., Sec. 4	Open Dump	Unauthorized dumping on an unleased site.
Lassen	11	T.38N., R.7E., M.D.M., Sec. 5	Open Dump	Unauthorized dumping on an unleased site.

TABLE 5 (continued)

County	Map Number	Legal Description		Remarks
Shasta	8	T.32N., R.6W., M.D.M., Sec. 30	Open dump	Spillover from dump on private land.
Imperial	70	T.13S., R.12 E., S.B.M., Sec. 17	Open dump	Unauthorized dumping on an unleased site.
San Bernardino	48	T.11N., R.2E., S.B.M.	Open dump	Richardson Dump: unauthorized dumping on an unleased site.
San Diego	72	T.12S., R.4E., S.B.M., Sec. 33	Open dump	Julian: unauthorized dumping on an unleased site.

activities on public lands unless steps are taken to identify persons responsible for the violations. In most cases, removal of material and dumpsite cleanup provide enough of a deterrent for future violations.

PROBLEM IDENTIFICATION

After a review of R&PP solid waste disposal case files, and trespass reports in each district, significant problems were identified. Some of the problems are directly related to BLM on-the-ground monitoring and reclamation activities at leased sites and trespass dumps. Other, and perhaps more important, problems are related to BLM implementation of procedures which are used for planning site location design and operation of solid waste disposal facilities. The following list identifies those problems which should receive attention by the BLM in the near future.

Solid Waste Disposal Site Planning and Design

(1) A lack of sufficient data on surface- and ground-water quality precludes the thorough assessment of potential environmental impacts on water resources.

(2) A lack of sufficient data on site hydrology, both surface and subsurface, precludes a thorough delineation of floodplain boundaries and ground-water depth and movement.

(3) A lack of detailed soils data precludes a thorough analysis of soil characteristics, suitability of cover material and site erosion potential.

(4) A lack of clear direction associated with Visual Resource Management has precluded the incorporation of visual design criteria in site plans.

Solid Waste Disposal Site Monitoring

(1) A lack of equipment and adequate funding precludes the development of a field water-quality monitoring program. Field data are needed to assess the impacts of solid waste disposal sites on surface and ground waters.

(2) The frequency of compliance checks for solid waste disposal sites has been inadequate in the past. Field manpower and funding constraints have not allowed for annual compliance checks as outlined in the BLM Manual.

(3) Compliance check procedures do not provide sufficient instruction to field personnel on how to evaluate whether site maintenance and operation practices are in compliance with lease stipulations.

(4) Problem site areas found to be in noncompliance may continue to violate lease stipulations for unreasonably long periods of time. Enforcement actions should be initiated in these cases. In the past, the EPA has been unwilling to assist in enforcement actions when assistance has been requested.

(5) The BLM has made no provision for recovering costs associated with disposal site cleanup resulting from poor disposal site operation and maintenance by lessees.

(6) Trespass dumps continue to be used after they have been identified by BLM personnel. In many cases steps have not been taken to clean up open dumping areas and abandoned lease sites to discourage continued use.

ENVIRONMENTAL IMPACTS OF SOLID WASTE DISPOSAL PRACTICES

The potential environmental impacts associated with solid waste disposal practices show the necessity for the development of best management practices (BMPs) for the control of pollution from disposal sites. Potential environmental impacts include, but are not limited to, (1) Soil erosion by exposure to wind and water, (2) runoff leading to siltation and contamination of surface waters, (3) ground and surface water pollution from movement of leachate products of decomposition, (4) air quality degradation resulting from dust generation and from decomposition gases, (5) health hazards resulting from human contact with insects and rodents inhabiting disposal sites, (6) reduction of visual resource values on surrounding lands, (7) increase in hardness and increase in iron caused by carbon dioxide (CO_2) gas migrating to the ground water body.

A discussion of the potential environmental impacts associated with solid waste disposal pratices is presented below. The environmental impacts are of concern to the BLM in their routine management of solid waste disposal sites on public lands. They form the basis for best management practices for the control of non-point source pollution from waste disposal areas.

Leachate Production and Movement

Leachate is the liquid material that is released by a solid waste disposal site during the process of waste decomposition. Leachate production is a natural process which results from physical, chemical, and biological transformation of the waste materials deposited in the disposal site. The chemical content of leachate is highly variable and is related to types of waste materials present in the disposal site. Generally, leachate is an acidic liquid high in dissolved and suspended solid materials. Test studies have revealed the presence of many different ionic species (see Table 6).

The quantity of leachate produced is dependent upon the initial moisture content of the materials present and on the rate of water infiltration and percolation through the disposal site. A solid waste disposal site generates some moisture through natural decomposition. Usually the amount of leachate produced from within the site is negligible and can be absorbed and held in place by the waste material. Excessive amounts of leachate are produced when extraneous water enters the site and increases the moisture content of the waste material beyond its field water holding capacity.

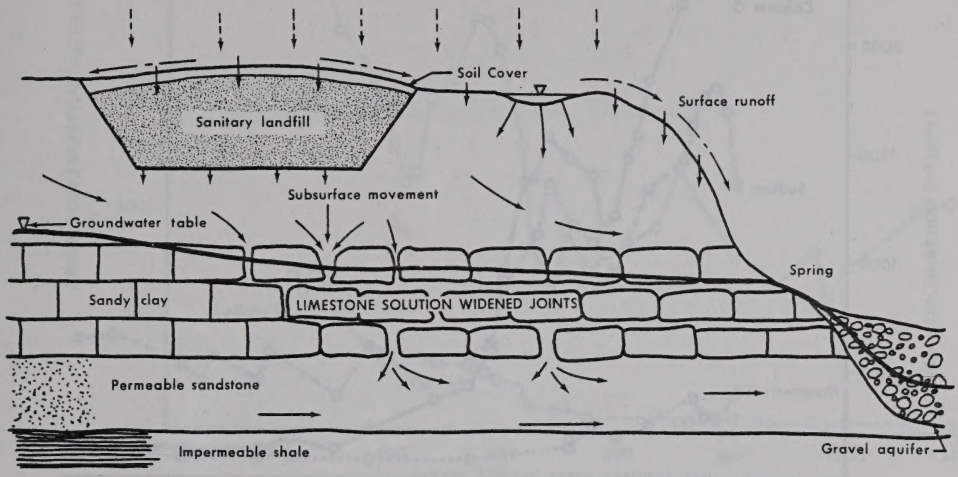
Leachate in excess of field capacity may leave the fill at the ground surface as a spring or percolate through the soil and rock surrounding the site in the form of ground water (see Figure 1). For this reason, the climate and geohydrology of the proposed site should be studied in detail so measures can be taken to limit the volume of extraneous water entering a site and to confine the movement of any such leachate in an area so as not to pollute the water resources.

The quality of leachate is also important in determining its potential impacts on water quality. Studies have shown that leachate quality is time dependent. In general, leachate chemical strength decreases as the site ages. Figures 2 and 3 show the results of field measurements obtained from a landfill study site. The temporal aspects of leachate strength are important with respect to pollution in that greater control of leachate production and movement should be exercised during the early stages of a landfill operation.

Leachate that is produced in a landfill usually percolates downward through the underlying soils. The contaminants in the leachate are subject to a natural purification or attenuation process as they migrate into the soil. Pollutants move in either unsaturated flow, if the voids in the soil are only partially filled with water, or as saturated flow if the voids are completely filled with water.

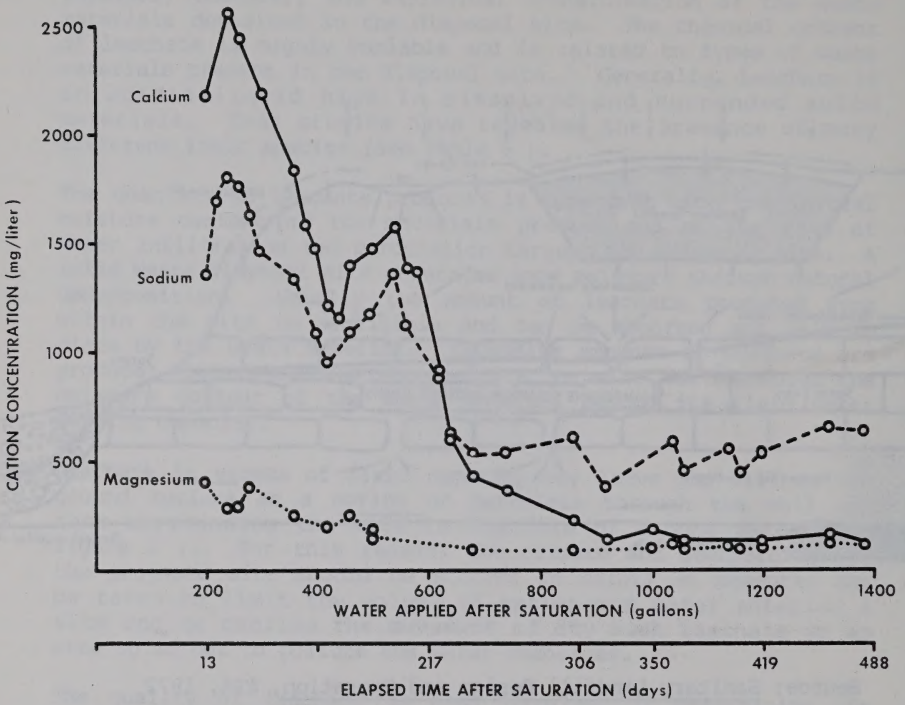
Figure 1

Surface Drainage Control -- Leachate and infiltration movements are affected by the characteristics of the soils and bedrock.



Source: Sanitary Landfill Design and Operation, EPA, 1972

Figure 2
Water Quality of Leachate - Cations

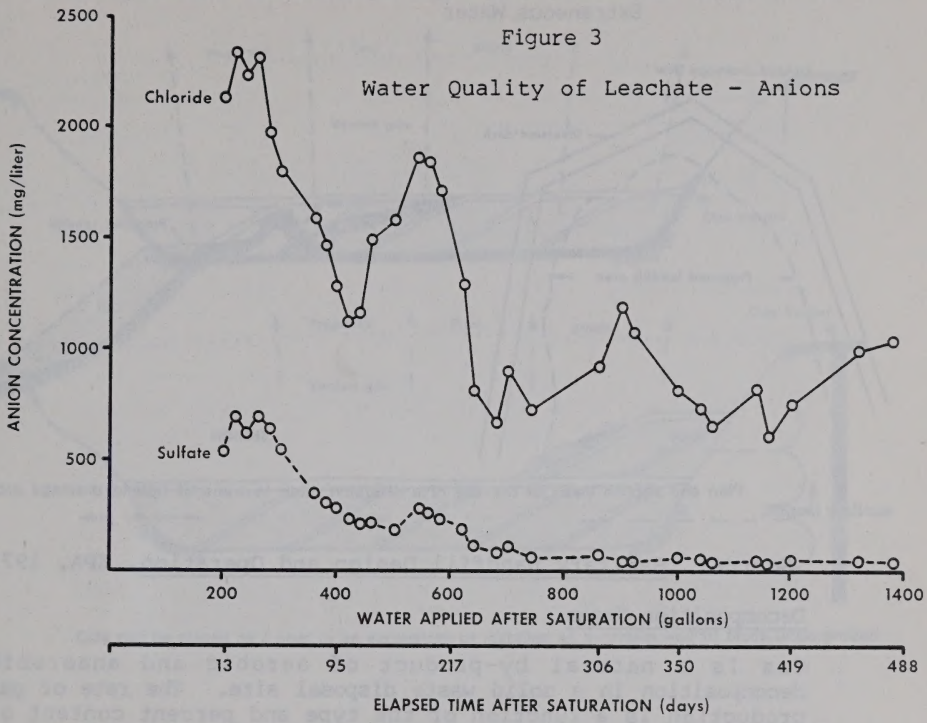


Source: California State Water Pollution Control Board, Report on the Investigation of Leaching of a Sanitary Landfill, 1954

The attenuation of contaminants flowing in the unsaturated zone is generally greater than in the saturated zone because of the greater availability of soil microbes and oxygen. If

Figure 3

Water Quality of Leachate - Anions



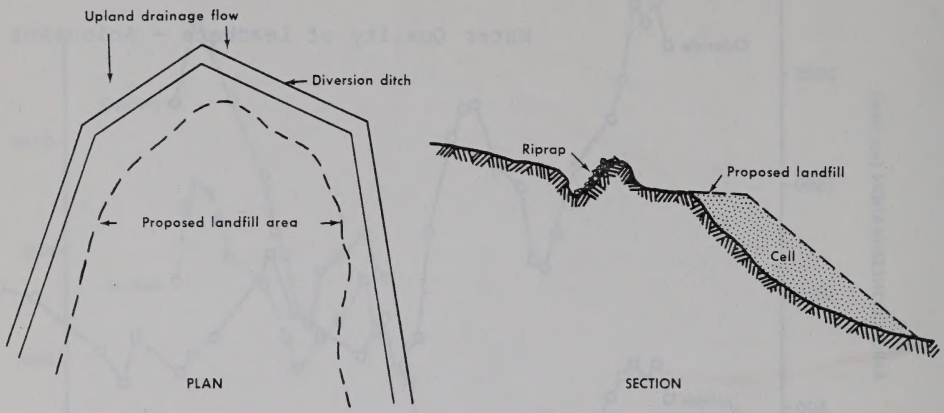
Source: California State Water Pollution Control Board, Report on the Investigation of Leaching of a Sanitary Landfill, 1954

leachate finds its way into the saturated zone, ground water contamination is likely to occur. Once the leachate enters the ground water, subsequent movement will closely follow the streamlines of ground water flow. Figure 1 shows the surface and subsurface hydrology and direction of water movement in a typical solid waste disposal site.

The present philosophy of the Environmental Protection Agency's Office of Solid Waste and many experts in the field of solid waste disposal is that leachate production and movement may be prevented or minimized through the application of sound solid waste disposal site engineering design practices. Figure 4 shows how upland drainage control can provide protection from extraneous water entering the landfill.

Figure 4

Surface Hydrology - Control of Extraneous Water



Plan and section views of the use of a diversion ditch to transmit upland drainage around a sanitary landfill.

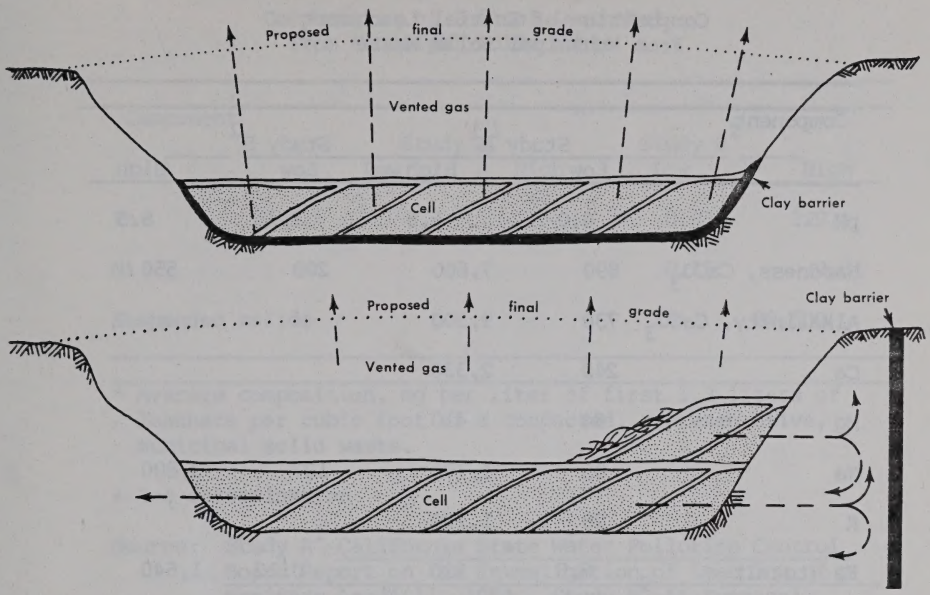
Source: Sanitary Landfill Design and Operation, EPA, 1972

Decomposition Gases

Gas is a natural by-product of aerobic and anaerobic decomposition in a solid waste disposal site. The rate of gas production is a function of the type and percent content of various waste materials. The most common gases produced include carbon dioxide, methane and hydrogen sulfide.

The production of gas is important to consider because of the associated environmental impacts which may result. Carbon dioxide gas is soluble in water and can significantly impact the quality of groundwater. Carbon dioxide gas CO_2 may also alter soil permeability, soil structure, and geologic structure (limestone) important to groundwater movement. In addition, methane gases is explosive when mixed with air in the proper proportions. It is not soluble in water and has no effect on groundwater quality. Control of these gases should be considered; especially if the area is to be used as a recreational facility upon completion. Figure 5 shows how clay barriers can be employed to control the movement of gas in a solid waste disposal site. Venting sites may be necessary to provide a path for movement of methane to the surface.

Figure 5
Control of Gas and Accumulation and Movement



Clay can be placed as a liner in an excavation or installed as a curtain wall to block underground gas flow.

Source: Sanitary Landfill Design and Operation, EPA, 1972

Soil Erosion and Sediment Production

Most sanitary landfills require the disruption and movement of large amounts of soil. The soil loses its stability when disturbed and if not properly managed can lead to severe water quality problems. The construction of roads into a disposal area also increases the rate of soil erosion and subsequent deposition into nearby surface waters. Table 7 lists the soil limitations for the siting of sanitary landfills.

The soils which are present in a solid waste disposal area should be suitable for use as an impermeable cover layer at site closure and at the same time, provide for a stable road

Table 6

Composition of Initial Leachate*
From Municipal Solid Waste

Component	Study A[1]		Study B[2]	
	Low	High	Low	High
pH	6.0	6.5	3.7	8.5
Hardness, $CaCO_3$	890	7,600	200	550
Alkalinity, $CaCO_3$	730	9,500		
Ca	240	2,330		
Mg	64	410		
Na	85	1,700	127	3,800
K	28	1,700		
Fe (total)	6.5	220	0.12	1,640
Ferrous Iron	8.7+	8.7+		
Chloride	96	2,350	47	2,340
Sulfate	84	730	20	375
Phosphate	0.3	29	2.0	130
Organic-N	2.4	465	8.0	482
NH_4-N	0.22	480	2.1	177
BOD	21,700	30,300		
COD			809	50,715

Table 6

Composition of Initial Leachate*
From Municipal Solid Waste

Component	Study A[1]		Study B[2]	
	Low	High	Low	High
Zn			0.03	129
Ni			0.15	0.81
Suspended solids			13	26,500

* Average composition, mg per liter of first 1.3 liters of leachate per cubic foot of a compacted, representative, municipal solid waste.

+ One determination

Source: Study A[1] California State Water Pollution Control Board Report on the Investigation of Leaching of a Sanitary Landfill, 1954. Study B[2]-AA Fungaroli, Pollution of subsurface water by a sanitary landfill, 1972.

Table 7
Soil Limitation Ratings for Sanitary Landfills

Item affecting use	Degree of soil limitation		
	Slight	Moderate	Severe
Depth to seasonal 1/ water table	More than 60 inches	40-60 in.	Less than 60 inches
Soil drainages 1/ Class	Excessively drained, somewhat excessively drained, well drained, and moderately well drained	somewhat poorly drained	Poorly drained and very poorly drained
Flooding	None	Rare	Occasional or frequent
Permeability 2/	Not class determining if less than 2 in./hr.		More than 2 in./hr.
Slope	0-8 pct	8-15 pct	More than 15 pct

1/ Reflects influence of wetness on operation of equipment

2/ Reflects ability of the soil to retard movement of leachate from landfills; may not reflect a limitation in arid and semiarid areas.

Source: Guide for Interpreting Engineering Uses of Soils, U.S. Department of Agriculture, 1971

Table 8

Suitability of General Soil Types as Cover Material*

Function	Clean Gravel	Clayey-silty Gravel	Clean Sand	Clayey-silty Sand	Silt	Clay
Prevent rodents from burrowing or funneling	G	F-G	G	P	P	P
Keep flies from entering	P	F	P	G	G	E+
Minimize moisture entering fill	P	F-G	P	G-E	G-E	E+
Minimize land fill gas venting through cover	P	F-G	P	G-E	G-E	E+
Provide pleasing appearance and control blowing paper	E	E	E	E	E	E
Grow vegetation	P	G	P-F	E	G-E	F-G
Be permeable for venting decomposition gas	E	P	G	P	P	P

* E-excellent, G-Good, F-Fair, P-Poor
+ Except when cracks extend through the entire cover
# Only if well drained

Source: Sanitary Landfill Design and Operation, EPA, 1972.

Table 9

Suitability Ratings of Soils as Source of Cover Material for Sanitary Landfills

Item affecting use	Degree of soil suitability		
	Good	Fair	Poor
Moist consistence	Very friable, friable	Loose, firm	Very firm, extremely firm
Texture 1/	Sandy loam, loam, silt loam, sandy clay loam	Silty clay loam, clay loam, sandy clay, loamy sand	Silty clay, clay, muck peat, sand
Thickness of material (Usually uppermost part of profile	More than 40 in.	20-40 in.	Less than 20 in.
Coarse fragment: percent, by volume	Less than 15 pct	15-35 pct	More than 35 pct
Stoniness class 2/	0 and 1	2	3, 4 and 5
Slope	Less than 8 pct	8-15 pct	More than 15 pct
Drainage class (wetness)	Not class determining if better than poorly drained		Poorly drained and very poorly drained

1/ Soils having a high proportion of non-expansive clays may be given a suitability rating one class better than is shown for them in this table.

2/ For class definitions see Soil Survey Manual, SCS, p. 216-223

Source: Guide for Interpreting Engineering Uses of Soils, SCS, 1971.

surface. The soils present at a site should be thoroughly sampled and classified prior to site design. In this way the engineering properties of soils can be considered in the location and design of the site. Consideration also should be

given to soil erosive potential and likihood of movement and depositon into surface waters. Table 8 lists the textural classes of soil and their suitability for use as cover material at a waste disposal site. Table 9 provides information that can be used to assess the suitability rating of various soils for use as cover material.

A clay liner with a leachate collection system should be provided in areas where local soils are too permeable to confine leachate material within the disposal site. Commercial bentonite clay or other impermeable clay soils may be used as a liner at the bottom of each cell to restrict the downward movement of leachate. Leachate collection, treatment and disposal must be provided at sites where liners are required.

Visual Resources Management

All solid waste disposal sites must be designed to maintain visual resources values. Each potential disposal site must be evaluated as a separate action with the potential to nulify scenic quality in the immediate vicinity of a site. The following discussion provides an introduction to the visual resources management program of the BLM.

The visual management class of a proposed site must be determined before visual impacts can be assessed. The visual management users of an area determines the degree of action that must be taken to mitigate visual resource impacts resulting from solid waste disposal sites.

Visual Resource Management is required on BLM administered lands by Federal law. Management of this resource requires an inventory and analysis of scenic quality and visual sensitivity and contrast ratings. These environmental values are considered in the planning process by systematically studying the nature of a solid waste disposal site action in relation to environmental factors. The analyses can be conducted on an individual factor or an aggregate of related actions within a particular area.

The degree to which a solid waste disposal activity affects the visual quality of the landscape depends upon the amount of visual contrast that is created between the activity and the existing landscape character. The amount of contrast between a proposed activity and the existing landscape character can be measured by separating the landscape into its major features, (land, water, vegetation, and structures), and then predicting the magnitude of change in contrast of each of the basic elements (form, line, color, and texture) to each of these features. Assessing the

amount of contrast for a proposed activity in this manner will indicate the severity of the impact and serve as a guide in determining what is required to reduce the contrast to meet visual management classes of the area.

The following parameters are applied to determine whether the proposed activity will meet the requirements of the visual resource management classes assigned to the area or site.

Class I

The class provides primarily for natural ecological changes only. It is applied to primitive areas, some natural areas, and other similar situations where management activities are to be restricted.

Class II

Areas of critical environmental concern and changes in any of the above mentioned elements (form, line, color, texture) caused by an activity should not be evident in the characteristic landscape.

Class III

Changes in the basic elements may be evident but should remain subordinate to the visual character of the existing landscape.

Class IV

Changes may subordinate the original composition and character but must reflect what could be a natural occurance within the characeristic landscape.

Class V

Existing landscape impacts are identified for and specified for rehabilitation to bring the characteristic landscape back into character with the surrounding countryside. This is considered an interim short term classification and identified in the scenic quality inventory.

Fly and Vermine Control

Waste disposal sites provide good habitat for undesireable animals. Many of these animals are disease carrying vectors and represent a potential health hazard to employees and the general public. Proper care should be taken to limit the opportunity these pests have for moving into a solid waste disposal site. In most cases, proper operation of the disposal site is sufficient to keep pest populations to a manageable level. Table 8 lists the suitability of various soil texture types as cover control measures for fly and vermine control. If the routine application of cover material does not provide adequate insect control, the following Table 10 can be used as a guide for the application of insecticides. The emergency use of pesticides for the control of solid waste disposal pests requires prior written approval of the BLM. The application procedures which must be followed are outlined in Instruction Memo 78-203 (see Appendix, Illustration IX).

TABLE 10
INSECTICIDES FOR FLY CONTROL
(outdoor space sprays)

INSECTICIDE	APPROXIMATE LB. PER ACRE DOSAGE REQUIRED FOR EFFECTIVE KILLS (up to 200 ft.)
Malathion	0.6
Dichlorous	0.3
Naled	0.1 - 0.2
Dimethoate	0.1 - 0.2
Diazinon	0.3
Fenthion	0.4
Ronnel	0.4

Source: Sanitary Landfill Design and Operation, EPA, 1972

PART III
BEST MANAGEMENT PRACTICES (BMPs) FOR THE DISPOSAL OF SOLID WASTE MATERIAL ON PUBLIC LANDS

BEST MANAGMENT PRACTICES
FOR THE CONTROL OF POLLUTION
FROM SOLID WASTE DISPOSAL SITES

The planning and design procedures which the BLM follows in the leasing and monitoring of solid waste disposal facilities are the most effective means to prevent the occurrence of non-point-source water pollution. Existing BLM planning and engineering design requirements for new disposal sites reflect current state-of-the-art technologies which minimize the likelihood of environmental degradation when they are properly implemented, but do not address the hydrogeologic considerations. The steps that are taken to minimize environmental degradation during the planning stage, however, are not always an adequate means of pollution control. A large number of solid waste disposal site plans do not take the hydrology of the proposed area into consideration. As a result, pre-lease planning and design procedures do not work as effectively as they should. In addition, a few operators do not comply with lease stipulations and continue to trespass burn and/or dump. Many lessees are chronic violators of lease stipulations, which places them in the noncompliance category.

Best management practices (BMPs) need not be limited to engineering design, planning and monitoring of disposal sites, but should include provisions for public education and involvement in the development and implementation of good solid waste disposal practices. Therefore, best management practices for solid waste disposal should be subdivided to include both the social aspects of pollution control and the proper engineering design, operation and maintenance of disposal sites.

This section lists additional best management practices which will be adopted by the BLM to prevent, reduce or eliminate non-point sources of pollution resulting from inadequate solid waste disposal practices on BLM lands. The problems that were identified in the preceding section form the basis for many of the BMPs listed below. In some cases, best management practices represent improvements of steps that are currently being taken by BLM personnel to prevent the occurrence of pollution from solid waste disposal sites. In addition, the BMPs are directed towards upgrading current planning and leasing procedures to provide proper consideration of soils and ground-water and surface-water resources.

Public Awareness and Coordination with Government Groups BMPs

The BLM will work more closely with the public and local units

of government to educate them in the aspect of non-point-source water pollution resulting from improper solid waste disposal practices, e.g., open dumping and burning, deposition of waste in ground-water recharge areas or in flood plains, etc.

IMPLEMENTATION RECOMMENDATION

State Office

Develop a public involvement and information program which explains the environmental impacts of solid waste disposal on BLM lands. The hydrologic implications of site design and the potential non-point-source water quality impacts of solid waste disposal should be stressed. Make applicant aware that he must comply with Subchapter 3, Title 23 of the California Administrative Code and file for waste discharge requirements with the appropriate Regional Water Quality Control Board. This information should be made available to all applicants who request a solid waste disposal lease on BLM lands. Input from the State Solid Waste Management Board should be solicited to asssure that BLM procedures are consistent with State solid waste disposal policy.

District Offices

Distribute information and make presentations to local units of government involved in the R&PP lease application process. They should coordinate with the State Office to maintain an up-to-date awareness of BLM policy changes and modifications to solid waste disposal regulations.

The BLM will work with counties, local units of government, the State of California and the EPA in an effort to stress the need for consolidation of disposal sites and closure of areas that are determined to be inadequate by environmental and health standards.

IMPLEMENTATION RECOMMENDATION

State Office

Take the lead on the development of a BLM task

force to include representatives from each District Office. The task force would be responsible for reviewing all existing R&PP disposal site leases and making recommendations regarding consolidation of sites. Formation of the task force is predicated upon the completion of a field inventory of all existing BLM disposal sites to determine whether sites comply with EPA regulations regarding the safe operation of disposal sites.

District Offices

Provide a representative for the task force. Work with the counties and local units of government in an effort to implement disposal site consolidation recommendations.

The BLM will work with the counties, local units of government and the appropriate Regional Water Quality Control Board to clean up existing trespass dumps and dumps that were improperly managed in the past.

IMPLEMENTATION RECOMMENDATION

State Office

Coordinate an inventory of all trespass dumpsites to identify responsible parties. Contact counties and local units of government which have a poor track record for solid waste disposal on BLM lands in an effort to solicit their help in dumpsite cleanup. Research other potential sources of funding (State Solid Waste Management Board and EPA) for dumpsite cleanup and reclamation.

District Offices

Provide a representative to assist the State Office in conducting the inventory of all trespass waste disposal sites. Provide a liaison with the counties and local units of government in an effort to solicit help in the cleanup and reclamation of unlicensed solid waste disposal areas.

Planning, Design, and Operation BMPs

Planning

The BLM will incorporate into its planning system an identification of potential future solid waste disposal sites based on data obtained in routine field inventories and other applicable planning programs.

IMPLEMENTATION RECOMMENDATION

State Office

> Develop a land-use planning procedure that incorporates URA resource data (e.g., geology, climate, water resources, visual resources, soils, etc.) in an effort to identify areas that have a potential for solid waste disposal. The MFP recommendations regarding solid waste disposal should be made for each planning unit. This framework would serve to identify conflicts between resources and solid waste disposal uses. Information developed in the planning system could be made available to local units of government requesting R&PP lease sites for solid waste disposal sites.

The BLM will obtain or will require the lease applicant to supply the following information for each solid waste disposal site to the extent that EPA and State of California guidelines and requirements for the disposal of solid waste materials are met or exceeded:

(1) Climatological analysis of the proposed site prior to design to identify seasonal operational constraints imposed by weather changes (e.g., frequency of covering, depth of cover, location of trash fences or windbreaks and seasonal accessibility of the site);

(2) Hydrological analysis of the proposed site to establish surface drainage flow patterns, ground-water flow direction and to determine whether the area is subject to flooding (Executive Order-Floodplain Management);

(3) Water-quality analyses to determine baseline surface- and ground-water quality conditions before the proposed land disposal practices are implemented. These analyses will provide baseline data against which actual site performance comparisons can be made during compliance checks;

(4) Soils analyses to determine their physical properties as

they relate to solid waste disposal site design. Soils must be field sampled and classified to the series level. The volume of suitable cover material must be estimated;

(5) Geologic analyses to determine the nature of the underlying bedrock and whether there is a potential for ground-water contamination.

IMPLEMENTATION RECOMMENDATION

State Office

Develop a BLM manual section that incorporates the evaluation criteria to be considered during the preparation of the EAR for a solid waste disposal site. All field data required of the applicant should be identified so environmental impacts on water resources can be adequately assessed as outlined in the regulations. A field data inventory procedure that explains field sampling requirements should be developed and made available to lease applicants.

Engineering Design

The BLM will require that a professional civil engineer develop and/or certify the design plans for each solid waste disposal site before a lease is issued. The site design plans must include the following:

(1) Provisions for: (1) the control of surface-water movement to prevent excess water from entering the landfill site and to make certain that diversion ditches do not empty directly into surface waters; (2) settling ponds to reduce suspended sediment loads if necessary; and (3) location of disposal sites away from floodplains. Disposal sites must be protected from the 100 year storm to conform with state regulations.

(2) Provisions for the protection of ground-water resources from leachate contamination if necessary -- allow for a minimum of ten feet separation between the highest level of the water table and the lowest portion of the landfill; be cognizant of localized changes in the level of ground-water caused by changes in the permeability of soils surrounding the site;

(3) Provisions for the installation of clay (bentonite) liners or liners of relatively impermeable soils to prevent seepage of leachate in areas where there is a potential

for ground-water contamination;

(4) Provisions for the collection, treatment and safe disposal of leachate, when liners are used;

(5) Provisions for gas escape through proper site design and installation of vents -- clay can be used to control the accretion of gas by acting as a barrier wall;

(6) Provisions for the proper placement of roads in areas where surface disturbance is likely to contribute to water pollution in surface streams;

(7) Provisions for the incorporation of landscape archetectural design practices if required for the enhancement of visual resources;

(8) Provisions for site rehabilitation, (e.g., revegetation).

(9) Ongoing erosion control plans to prevent erosion and downstream sedimentation.

IMPLEMENTATION RECOMMENDATION

State Office

Develop, in conjunction with EPA and the State of California, solid waste disposal site design and rehabilitation criteria. The design criteria should reflect BMPs for the control of non-point-source water pollution. Design criteria should be incorporated into the BLM Manual and made available to solid waste disposal lease applicants. In this way, the BLM can be assured that the solid waste disposal site designer is cognizant of all applicable regulations regarding the safe disposal of solid wastes.

Site Operation

The BLM will require that each disposal site operator comply with EPA guidelines and requirements for the disposal of solid waste materials. The following procedures must be adhered to:

(1) Separate compactable waste materials from bulk items such as appliances, car bodies and tree stumps. Compactable waste must be placed in thin layers about two feet thick and then

compacted. Bulky wastes which can be compacted must be crushed and pushed into the working face near the bottom of the cell. Noncompactable bulky items must be disposed of in a specially designated area of the land disposal site. Signs must be posted describing which wastes are excluded from the disposal site.

(2) Institutional wastes, such as hospital wastes, if delivered separately, must be compacted and buried under one foot of cover material.

(3) Dead animals should be incorporated into the landfill and covered immediately.

(4) Dewatered sludges must be mixed with other waste material before covering if moisture content is too high and localized leaching might occur; sludges must be covered immediately.

(5) Animal manures containing excess moisture must be mixed with other waste material before covering. Manure waste should be covered immediately.

(6) Cover material must be applied daily to a compacted thickness of six inches. Only the working face should be exposed at the end of the day.

(7) No open burning of solid waste material is permitted. Cells must be constructed to contain an underground fire if one occurs.

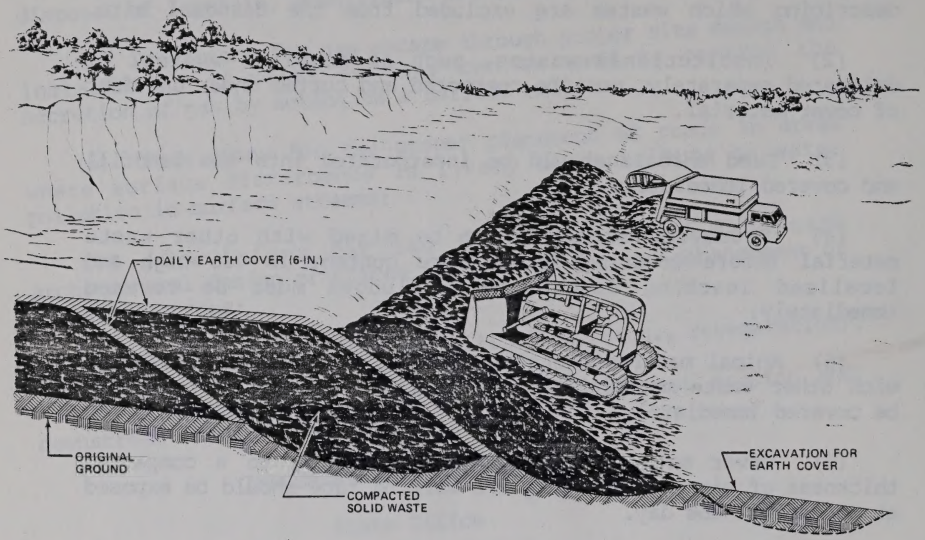
(8) Litter fences must be provided to conrol blowing refuse.

(9) Scavenging at the disposal site must be prohibited unless selected salvage areas and the appropriate processing and storage facilities have been provided for salvaging activities.

(10) Prior to the start of the rainy season, properly sloped cover should be provided to facilitate runoff, prevent ponding and percolation of rainfall into the waste.

Figures 6 through 8 show the proper operating procedures which should be used for the disposal of solid waste materials.

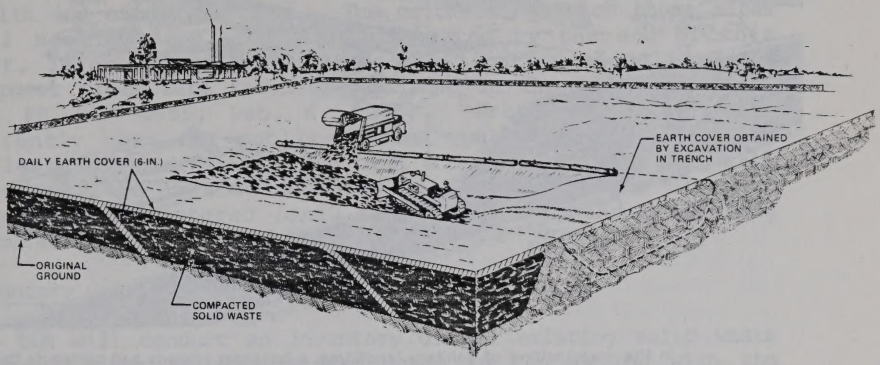
Figure 6
Solid Waste Disposal
Slope Ramp Method



In the progressive slope or ramp method of sanitary landfilling, solid waste is spread and compacted on a slope. Cover material is obtained directly in front of the working face and compacted on the waste.

Source: Sanitary Landfill Design and Operation, EPA, 1972

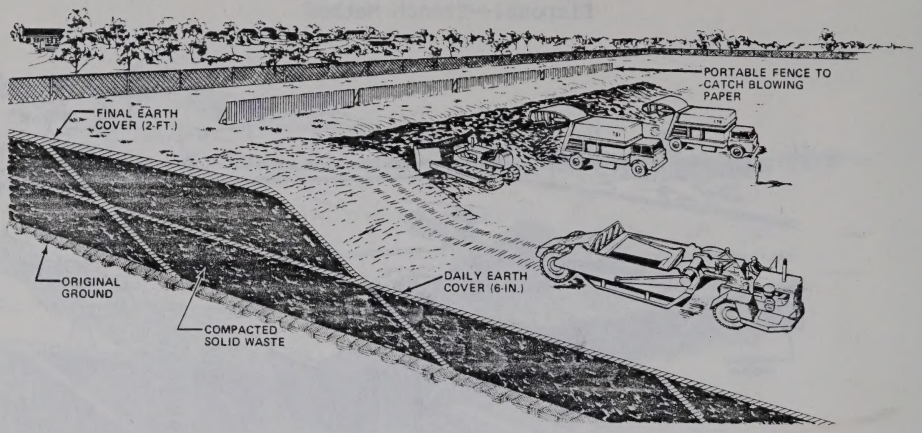
Figure 7
Solid Waste
Disposal--Trench Method



In the trench method of sanitary landfilling, the collection truck deposits its load into a trench where a bulldozer spreads and compacts it. At the end of the day, the trench is extended, and the excavated soil is used as daily cover material.

Source: Sanitary Landfill Design and Operation, EPA, 1972

Figure 8
Solid Waste Disposal--
Sanitary Landfill Area Method



In the area method of sanitary landfilling, a bulldozer spreads and compacts the waste on the natural surface of the ground, and a scraper is used to haul the cover material at the end of the day's operations.

Source: Sanitary Landfill Design and Operations, EPA, 1972.

MONITORING, INSPECTION AND INVENTORY OF SOLID WASTE DISPOSAL SITES

The implementation of proper solid waste disposal site design and operation procedures should prevent the occurrence of surface- and ground-water pollution. In the past, surface- and ground-water quality monitoring of disposal sites on BLM land has not been conducted due to a lack of professional expertise and monitoring equipment at the district level. A review of existing BLM waste disposal sites leases indicates that there is a need for water quality monitoring to assure that water resouces are not degraded. Regional Water Quality Control Board files of solid waste disposal sites should be checked to minimize duplication of effort in the collection of water quality monitoring data.

The current status and future potential for non-point source water pollution of many existing BLM waste disposal sites is unknown. Many waste disposal site lessees have been found in noncompliance with lease stipulations. There is a definite need to inventory and inspect all of the BLM's R&PP solid waste disposal sites to determine whether there is a potential for non-point-source water pollution. Those operators who continue to violate lease agreements should be contacted and the necessary steps should be taken to correct the violations

in a timely fashion.

The Resources Conservation and Recovery Act of 1976 and guidelines promulgated thereunder indicate that the EPA intends to have the States inventory all solid waste disposal sites to determine whether they meet applicable environmental health and safety criteria. The criteria by which these sites will be evaluated will be promulgated by the end of this year. Proposed criteria for classification of solid waste disposal sites were recently published in the Federal Register (43 FR 4949-4955, Feb. 6, 1978). Proposed criteria are currently open for public comment and will be revised to reflect comments within the next six months. The BLM will take the lead in the inventory of all solid waste disposal sites on administered lands. The inventory and monitoring requirements are outlined below.

Inventory

The BLM will conduct an inventory of all existing solid waste disposal sites on administered lands in conjunction with the State of California. The proposed regulations for the inventory of existing sites require that EPA publish, within one year after final promulgation of the criteria for classification, an inventory of all facilities that do not meet the environmental siting requirements. All new facilities must comply with the criteria and all existing sites that do not meet the criteria must be closed or upgraded according to a State-established compliance schedule within a reasonable time, not to exceed five years.

IMPLEMENTATION RECOMMENDATION

State Office

Develop an inventory procedure for assessing the current status of all solid waste disposal sites on BLM lands. Close coordination with the State of California Solid Waste Management Board and EPA would be necessary after the final regulations on classification have been promulgated. The active involvement of the BLM in the inventory process would assure that compliance schedules developed by the State of California are consistent with BLM interests. Possible sources of funding include EPA, State of California and EPA 208 monies earmarked for Federal agencies.

District Offices

Complete field inventory surveys under the direction of the State Office. District staff would also develop compliance time schedules for solid waste disposal sites that do not meet established criteria.

Develop a water-quality monitoring program for all disposal sites that have the potential for polluting water resources. This program would include both surface- and ground-water quality monitoring for active lease sites, trespass dumps and abandoned dumpsites. The water-quality monitoring program is needed for the solid waste disposal site inventory as outlined above. Existing water quality monitoring programs established by the Regional Water Quality Control Boards under the self-monitoring program for all waste disposal sites would be received prior to the initiation of any sampling.

IMPLEMENTATION RECOMMENDATION

State Office

Develop a State-wide priority sampling list of existing solid waste disposal sites on public lands. They will provide direction on sampling methods to the District Offices. Develop water quality sampling contracts, if necessary, for ground-water reconnaissance.

District Offices

Provide input to the State Office in the development of a priority sampling list. Conduct field sampling wherever possible and supervise independent contractors working in the field.

Compliance Inspections

Preceding sections of this report identified problems associated with existing solid waste disposal site compliance inspection procedures. These problems are summarized below.

(1) Compliance inspections are conducted too infrequently. In most cases, inspections are not conducted annually as required

by the BLM Manual. Manpower allocations for compliance inspections have been insufficient in the past as evidenced by the backlog of solid waste disposal sites currently pending compliance inspections.

(2) Compliance inspection procedures do not assure that disposal sites meet EPA regulations for the safe disposal of solid wastes. Existing compliance inspection procedures are developed on a site specific basis and are based on individual lease stipulations. However, evaluation criteria for lease compliance are not included in the compliance inspection procedure. Adequate compliance procedures are predicated upon the development of detailed lease stipulations that meet EPA disposal site regulations.

(3) The BLM has made few provisions for correcting or upgrading disposal sites found in noncompliance. Site closure and lease revocation are the only means by which the BLM can assure compliance. In the past, the EPA has been unwilling to assist the BLM in closing of disposal sites found in noncompliance.

Steps should be taken to upgrade compliance inspection procedures. The following BMPs address the problems listed above.

(1) The BLM will conduct compliance inspections of solid waste disposal sites annually. Additional manpower allocations will be made at the district level to assure site compliance and provide for the development of compliance schedules where necessary.

(2) Compliance inspection procedures will be revised to reflect existing EPA regulations for the safe disposal of solid waste materials. Evaluation criteria will be developed on a site-specific basis and will be based on lease stipulations.

IMPLEMENTATION RECOMMENDATION

State Office

Develop an up-to-date compliance inspection procedure to reflect EPA and State of California regulations. Compliance inspection forms should be revised and expanded to provide the field inspector with instructions on site evaluation criteria. Provisions should be made for training field personnel in the proper maintenance and operation of disposal sites.

(3) The BLM will evaluate alternate means of assuring compliance with lease stipulations. Enforcement actions against lease violators should be strengthened and implemented in a timely fashion. Compliance schedules will be developed for all disposal sites that do not meet EPA and State of California regulations for the safe disposal of solid wastes.

IMPLEMENTATION RECOMMENDATION

State Office

Develop alternate means of assuring compliance with lease stipulations. Coordinate with the State of California and the EPA to reflect their policies on solid waste disposal violators. Require that lease applicants post performance bonds to cover costs of any cleanup or site rehabilitation efforts that may become necessary in cases of noncompliance.

District Offices

Develop compliance schedules for disposal sites that do not meet EPA and State of California regulations for the safe disposal of solid waste materials. If an EPA regulation or lease stipulation is violated, the District Office should notify the State Solid Waste Management Board and the appropriate Regional Water Quality Control Board for initiation of enforcement and/or legal action to provide for correction of the problem.

Program Implementation Costs

The BMP recommendations developed for the BLM solid waste management program will require a significant level of funding for implementation. At the present time, there are several potential sources of funding:

(1) BLM budget funds;

(2) EPA 208 funds earmarked for Federal agencies;

(3) State of California solid waste disposal site inventory funds through EPA (pending approval).

The implementation of any or all of the BMPs described in this report is dependent upon the level of funding. To date, no

commitment has been made by BLM to provide funds for this program; EPA funds for the inventory of solid waste disposal sites have not been allocated and will not be forthcoming until such time as the State of California indicates a desire to participate in the inventory program. A cost analysis of plan implementation is provided in Table 11. Total work-month requirements for program implementation necessitates a multi-year programming approach. Support funds should not be allocated until disposal site inventory and water-quality sampling procedures have been developed. Program implementation should be phased in over a three-year period.

The majority of plan implementation is related to additional program development and is the responsibility of the State Office. Program development should be completed during the first two years (20 work months). Emphasis should be placed on the development of water-quality sampling and disposal site inventory procedures. District support to State Office program planning should be programmed during the first two years of plan implementation (13 work months).

Support funds for trespass dumpsite cleanup, water-quality monitoring and waste disposal site inventory should be allocated and funds split between the second and third years of plan implementation. The remaining work-month allocations (State Office - 13, District Offices - 10) should be allocated for the third year of plan implementation.

This cost analysis is a rough estimate of program funding requirements. A more detailed cost estimate will be prepared after an assessment is made of individual District Office needs with respect to solid waste disposal sites.

Table 11

Program Implementation Cost Estimate

BMP TASK Element	State Office Work-Months 1/	State Office Support Funding	District Office Work-Months 1/ Per District	District Office Support Funding Per District
Public Awareness And Education				
1. Public Involvement Program	3	$5,000	2	
2. Consolidation of Sites	4		1	
3. Trespass Dumpsite Cleanup	2		4	$20,000 per district
Planning, Design And Operation				
Planning				
1. Development of land use planning procedure to identify potential sites for solid waste disposal	3			
2. Development of Manual Section to incorporate disposal site evaluation criteria for EAR preparation	3			
Engineering Design				
1. Development of disposal site design plan criteria	5			

Table 11 - continued

BMP TASK Element	State Office Work-Months 1/	State Office Support Funding	District Office Work-Months 1/ Per District	District Office Support Funding Per District
Monitoring Inspection And Inventory of Solid Waste Disposal Sites				
1. Inventory of Existing solid waste disposal sites	4		8	$10,000
2. Water quality monitoring program	4		2	$50,000
Compliance Inspections				
1. Annual compliance inspections			4	
2. Revision of compliance inspection procedures	3			
3. Evaluation of alternate means of assuring compliance	2		2	
Sub-total	33	$5,000	23	$80.000

Total Six Districts 480,000

1/ 1 Work-month = approximately $2,000

Abbreviations

BLM	Bureau of Land Management
R&PP	Recreation and Public Purposes Act of 1926 (43 U.S.C. 869)
FR	Federal Register
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
MFP	Management Framework Plan
EAR	Environmental Analysis Report
LR	Lands Report
BMP	Best Management Practices

GLOSSARY OF TERMS

Encapsulate To seal a pesticide and its container, if appropriate, in an impervious container made of plastic, glass or other suitable material which will not be chemically degraded by the contents. This container should be sealed within a durable container made from steel, plastic, concrete or other suitable material of sufficient thickness and strength to resist physical damage during and subsequent to burial.

Hazardous Wastes Materials that are toxic, poisonous, corrosive, irritating, sensitizing radioactive, biologically infectious, explosive or flammable, and that present a significant hazard to human health and the environment. Included are wastes which pose a substantial present or potential hazard to human health or living organisms because (1) such wastes are nondegradable or persistent in nature, (2) they can be biologically magnified, or (3) they can be lethal or otherwise cause or tend to cause detrimental cumulative effects.

Heavy Metals Metallic elements of higher atomic weights including but not limited to arsenic, cadmium, copper, lead, mercury, manganese, zinc, chromium, tin, thallium and selenium.

Infectious Institutional Wastes (1) Equipment, instruments, and untensils of a disposable nature from institutions known to treat patients who are suspected of having a communicable disease: (2) laboratory wastes such as pathological specimens and other waste products derived from laboratories involved with materials that may transmit pathogenic organisms.

Leachate Liquid that has percolated through solid waste and has extracted dissolved or suspended materials from it.

Solid Wastes Garbage, refuse, sludges, and other discarded solid materials resulting from industrial and commercial activities. These do not include

solids or dissolved material in domestic sewage or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows or other common water pollutants.

Specially Designated Landfill — A landfill at which complete, long-term protection is provided for the quality of surface and subsurface waters from pesticides and pesticide-related wastes deposited therein, and against hazards to public health and the environment. Such sites should be located and engineered to avoid direct hydraulic continuity with surface and subsurface waters and any leachate or subsurface flow into the disposal area should be contained within the site unless treatment is provided. Monitoring wells should be established and a sampling and analysis program conducted.

Public Lands — Any land and interest in land owned by the United States within the several States and administered by the Secretary of the Interior through the Bureau of Land Management without regard to how the United States acquired ownership, except;

(1) Lands located on the Outer Continental Shelf, and

(2) lands held for the benefit of Indians, Aleuts, and Eskimos.

REFERENCES

Brunner, D.R. and Keller, D.J. 1972, Sanitary Landfill Design and Operation. Washington D.C.: U.S. Environmental Protection Agency, p.

California State Water Pollution Control Board. 1954. Report on the Investigation of Leaching of a Sanitary Landfill. Sacramento; Calif. Water Pollution Control Board, Pub. No. 10, p.

U.S. Congress. 1976. Resource Conservation and Recovery Act. P.L. 94-580, 90 Stat. 2795

U.S. Department of Agriculture, Soil Conservation Service. 1971. Guide for Interpreting Engineering Uses of Soils. Washington, D.C.: U.S. Dept. Ag., Soil Conservation Service, p.

U.S. Environmental Protection Agency. 1978. The Federal Task Force for Hazardous Material Management of the Western Federal Regional Council. San Francisco: U.S. Environmental Protection Agency., Region IX, p.

_____ "Guidelines for the Land Disposal of Solid Waste." Washington, D.C.: Office of the Federal Register, National Archives and Records Service, 40 CFR 241.

_____ "Guidelines for the Thermal Processing of Solid Wastes." Washington, D.C.: Office of the Federal Register, National Archives and Records Service, 40 CFR 240.

_____ "Regulations for the Acceptance of Certain Pesticides and Recommended Procedures for the Disposal and Storage of Pesticides and Pesticide Containers." Washington, D.C.: Office of the Federal Register, National Archives and Records Service, 40 CFR 165.

APPENDIX

Illustration I

IN REPLY REFER TO

2912 (322)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
STATE OFFICE
Federal Office Building
2800 Cottage Way
Sacramento, California 95825 March 8, 1976

INSTRUCTION MEMORANDUM NO. 76-138
Expires: 12/31/76

To: All Field Officials

From: Associate Director

Subject: Interim Instructions for Processing Applications for Solid Waste Disposal Sites under the Recreation and Public Purposes (R&PP) Act - FD 5/31/76

Enclosed is a proposed draft of a section of the 2912 Manual relating to solid waste disposal sites. This draft is being circulated to solicit comments from the field.

There are two points in this draft to be implemented immediately.

1. The draft Manual incorporates EPA guidelines for solid waste disposal as outlined in 40 CFR. These guidelines contain requirements which are mandatory, and recommended procedures which suggest preferred methods of achieving the required standards. The Authorized Officer, BLM, may permit the use of alternatives to the recommended procedures if he determines that the alternative methods will satisfy the requirements of the guidelines and are better suited to the local conditions.

2. The R&PP Act will not be used to authorize sites for the disposal or storage of permanent or long-term hazardous wastes. The basis for the policy is that noncompliance with the project plan could result in the return of permanently contaminated lands to the jurisdiction of BLM. We have neither the capability nor the expertise to provide monitoring and management of such contaminated lands. Potential applicants should be directed to contact the appropriate State agency for guidance and assistance.

These procedures will be incorporated into the BLM Manual as soon as possible after publication in the Federal Register of the final regulations pertaining to this subject. Please submit any comments to Director (320) by May 31, 1976.

Save Energy and You Serve America!

Illustration II

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

IN REPLY REFER TO
2912
C-931.1

STATE OFFICE
Federal Office Building
2800 Cottage Way
Sacramento, California 95825

Herbert Iwahiro,Chief
Planning &Implementation Division
State Solid Waste Management Board
1709 11th Street
Sacramento, CA 95814

Dear Mr. Iwahiro:

In your letter of December 2,1977 you requested copies of any rules or regulations we have issued on hazardous waste management.

The only regulations our agency has issued to date on this subject are contained in 43 CFR 2912. However, you will note reference is made to the need for compliance with the guidelines as promulgated by the Environmental Protection Agency in 40 CFR 165,240 and 241.

As you know local goverments in California have leased public lands from us for solid waste disposal sites under the Recreation and Public Purposes Act. Hazardous substances are not allowed in such public solid waste sites. We have been directed by our Washington Office not to authorize sites on public land for the disposal or storage of permanent or long-term hazardous wastes under R&PP Act provisions (see enclosed Instru.Memo No.76-138, dated 3/8/76).

A contract presently being executed between the BLM and the State Water Resources Control Board provides for BLM to furnish certain information to SWRCB for the preparation of water quality management plans as described in Sec. 208 of PL 92-500. This includes the specific means of handling solid/hazardous wastes generated or disposed of on public lands, The contract calls for this report to be submitted to the State on or before September 1, 1978.

Sincerely yours,

Ed Hastey
State Director

CONSERVE AMERICA'S ENERGY

Enclosures:
43 CFR 2912
BLM of 3/8/76
Memo

Save Energy and You Serve America!

§ 2911.1-3 Beacon lights.

Government department and agencies operating aircraft may be granted permission to establish beacon lights and other navigation facilities except terminal airports, on tracts of unreserved and unappropriated public lands of the United States of appropriate size, on application therefor, under the rules and regulations prescribed in § 2911.1-2. However, no rental will be charged. Lands for beacon lights and other navigation facilities may be withdrawn in accordance with the provisions of Group 2300 and Subpart 2317 of this chapter.

§ 2911.2 Procedures.

§ 2911.2-1 Applications.

(a) Applications under the Act may be made by: Any citizen of the United States; any group or association of citizens of the United States; any corporation, organized under the laws of the United States or of any State, authorized to conduct business in the State in which the land involved is located, any State or any political subdivision or instrumentality thereof, including counties and municipalities.

(b) No specific form of application is required.

(c) Each application must clearly describe the land applied for, must be signed by the applicant or by a duly authorized agent or officer.

(d) Each application must be accompanied by a non-refundable service fee of $10. However, no service fee will be required from a State of political subdivision or instrumentality thereof.

§ 2911.2-2 Report by Administrator, Federal Aviation Administration; execution of lease.

Upon receipt of the application one copy will be referred to the Administrator, Federal Aviation Administration, for consideration as to what fuel facilities, lights, and other furnishings are necessary to meet the rating set by that department. After the Administrator, Federal Aviation Administration, has reported, a lease on a form approved by the Director will be prepared and sent to the applicant for execution.

§ 2911.2-3 Segregation of lands.

The filing in the proper office of an application for a lease of lands under the act of May 24, 1928 (45 Stat. 728; 49 U.S.C. 211), as amended, shall segregate the lands described in the application from all appropriation.

(R.S. 2478, sec. 1, 45 Stat. 728, as amended; 43 U.S.C. 1201, 49 U.S.C. 211)

Subpart 2912—Recreation and Public Purposes Act

SOURCE: 35 FR 9664, June 13, 1970, unless otherwise noted.

§ 2912.0-7 Cross reference.

The general requirements of law and regulation and procedures under the Recreation and Public Purposes Act are contained in Part 2740 of this chapter.

§ 2912.1 Nature of interest.

§ 2912.1-1 Terms and conditions of lease.

(a) The term of leases under the act will be fixed by the authorized officer but will not exceed 20 years for nonprofit associations and nonprofit corporations and 25 years for Federal, State, and local governmental entities. Leases will be renewable at the discretion of such official (43 U.S.C. 869-1).

(b) Leases will be issued on a form approved by the Director and will contain the usual terms and conditions required by law, public policy, and, insofar as possible, by Department of the Interior procedure.

(c) Leases will contain such terms and conditions which the signing officer or the administering agency considers necessary for the proper development of the land, for the protection of Federal Property, and for the protection of the public interests.

(d) Leases will be terminable by the authorized official upon failure of the lessee to comply with the terms of the lease, upon a finding that all or part of the land is being devoted to other than the use authorized by the lease, or upon a finding that the land has not been used by the lessee for the purpose specified in the lease for any consecutive period specified by the authorized official but not more than 5 years or less than 2 years.

(e) Leases will not be transferable except with the consent of the proper official. Transferees must meet all the qualifications of applicants under the act and will be subject to all the terms and conditions of the regulations in this part.

(f) A lessee under the act will not be permitted to cut timber from the leased lands without prior permission from the appropriate officer.

(g) Any minerals subject to the leasing laws reserved to the United States in the lands patented or leases under the terms of the act may be disposed of to any qualified person under applicable laws and regulations. Until rules and regulations are issued, other minerals are not subject to disposition or to prospecting except by an authorized Federal agency.

[35 FR 9664, June 13, 1970, as amended at 41 FR 29123, July 15, 1976]

§ 2912.2 Renewal of leases.

(a) Applications for renewal of leases must be accompanied by three copies of a statement showing, in detail sufficient to describe the situation adequately, the past use of the lands and the proposed use after renewal of the lease.

(b) Section 2 of the Act of June 20, 1966, authorizes the issuance of new leases in lieu of leases which were in force on June 20, 1966. Applications for new leases must be accompanied by consent of the lessee to cancellation of the existing lease upon the issuance of the new lease and by three copies of a statement showing (1) the need for a new lease and (2) any changes in the terms and conditions of the lease which the applicant may desire.

§ 2912.3 Leases for solid waste disposal sites.

(42 U.S.C. 3254e.)

§ 2912.3-1 Requirements.

Compliance with *Guidelines for the Thermal Processing of Solid Wastes, Guidelines for the Land Disposal of Solid Waste, and Regulations for the Acceptance of Certain Pesticides and Recommended Procedures for the Disposal and Storage of Pesticides and Pesticide Containers,* as promulgated by the Environmental Protection Agency, is required under leases issued for purposes involving disposal of solid waste. Each such lease shall contain provisions to insure compliance.

[41 FR 22939, June 8, 1976]

§ 2912.3-2 References.

(a) *Guidelines for the Thermal Processing of Solid Wastes* are contained in 40 CFR 240 (39 FR 29328-29338).

(b) *Guidelines for the Land Disposal of Solid Waste* are contained in 40 CFR 241 (39 FR 29328-29338).

(c) *Regulations for the Acceptance of Certain Pesticides and Recommended Procedures for the Disposal and Storage of Pesticides and Pesticide Containers* are contained in 40 CFR 165 (39 FR 15236-15241).

[41 FR 22939, June 8, 1976]

§ 2912.3-3 Procedures.

(a) All new leases shall contain express stipulations requiring compliance with the above referenced guidelines. Leases and respective plans of development and management already in existence without such specific stipulations shall be amended to require compliance with the above guidelines by lessees. In all cases, the lease must stipulate that failure to comply with the guidelines shall constitute sufficient grounds for cancellation of the lease.

(b) Lease applicants shall include in the plan of development and management detailed descriptions of the methods and procedures that will be employed to achieve compliance with the above guidelines. The requirements in the guidelines delineate mandatory minimum standards of performance that must be followed. The recommended methods and procedures in the guidelines are means whereby the requirements can be met. Alternate methods and procedures may be used in meeting the requirements when approved by the authorized officer.

(c) Determinations as to how such compliance in meeting the requirements of the above guidelines shall occur are to be made by the autho-

99-165 O - 78 - 23

rized officer of the Bureau of Land Management. In making his determination the authorized officer shall take into consideration applicable Federal, State and local air, water pollution and solid waste disposal laws, regulations and plans.

[41 FR 22939, June 8, 1976]

§ 2912.3-4 Exceptions.

Leases under the act will not be used to provide sites for the disposal of permanent or long-term hazardous wastes.

[41 FR 22939, June 8, 1976]

Subpart 2913—Small Tract Act

SOURCE: 35 FR 9665, June 13, 1970, unless otherwise noted.

§ 2913.0-7 Cross reference.

The general requirements of law, regulations and procedures under the Small Tract Act are contained in Part 2730 of this chapter.

§ 2913.1 Terms and conditions of lease.

(a) The term of lease will be specified in the classification order and will not exceed three years for lands classified for lease and sale and will not exceed twenty years for lands classified for lease only.

(b) The amount of rental will be specified in the appropriate order. The rental for community sites will take into consideration the purpose for which the land will be used. Rental for other types of sites will equal the fair market rental of the lands, provided, however, the minimum rental will be $100 per year for business sites and $25 per year for other sites.

(c) Leases issued for periods in excess of five years will provide for the construction of improvements, satisfactory for the purpose for which the lease issued, during the first five years of the lease period. Failure to comply with this requirement will result in cancellation of the lease except where the lessee can demonstrate that such failure was due to unavoidable and unforeseen circumstances.

(d) Provisions relating to the improvement and occupancy of leased tracts are contained in the application form. Special provisions implementing the general provisions or the form may be indicated in the order of classification.

(e) A lessee will not be permitted to cut timber from the leased lands without first obtaining permission from the appropriate office mentioned in § 2731.3-1.

§ 2913.2 Assignment; subleasing.

(a) No assignment of a lease will be recognized unless and until approved by the Bureau of Land Management. Approval of assignments will be discretionary but in no case will an assignment be approved until suitable improvements are constructed on the land, except where the lessee can demonstrate that his failure to construct such improvements was caused by unforeseen and unavoidable circumstances.

(b) Proposed assignments of leases must be submitted within 90 days from the date of execution in duplicate on a form approved by the Director to the appropriate office mentioned in § 1821.2 and must be accompanied by the filing fee as required in § 2731.4.

(c) Subleasing of a tract, in whole or in part, will not be approved.

§ 2913.3 With option to purchase; sale; patent.

(a) Leases for lands classified for lease and sale will contain an option to purchase clause. The option to purchase clause will afford the lessee or his duly approved successor in interest an opportunity to purchase the tract at any time within the term of the lease, provided the improvements required by the lease have been made and all other terms and conditions of the lease complied with. The net purchase price of the land will be the appraised fair market value of the unimproved land as of the date of the lease minus an amount equal to the advance rental for each full lease year, if any, subsequent to the filing of an allowable application to purchase.

(b) An application to purchase must be filed with the office mentioned in § 1821.2 on a form approved by the Director in duplicate, together with (1) a statement as to the cost, type and

character of the improvements constructed on the land, (2) one or more photographs showing clearly such improvements, and (3) the filing fee as required in § 2731.4.

(c) If a sale is authorized, the applicant will be allowed 60 days from service of notice thereof to pay the net purchase price.

§ 2913.4 Renewal.

(a) An application for renewal of a lease must be filed on a form approved by the Director in duplicate with the office mentioned in § 2731.3-1(a) prior to the expiration of the lease. A renewal in the form of a new lease will be granted only if it is determined that a new lease should issue and that the requirements of paragraph (b) or (c) of this section have been met. The term of the lease and any special conditions will be established by the officer who signs it. The application must be accompanied by a filing fee in compliance with § 2731.4.

(b) Where the land has been classified for lease only, renewals will be approved only if the lessee has constructed satisfactory improvements on the tract appropriate to the type of use for which the lease originally issued, such as a substantial and presentable dwelling suitable for year-round or seasonal use where the land was classified for residence purposes.

(c) Where the land has been classified for lease and sale, renewals will be approved only upon a satisfactory showing that the lessee's failure to meet the requirements for sale of the tract is justified under the circumstances and that nonrenewal of the lease would work an extreme hardship on the lessee.

§ 2913.5 Termination or cancellation; removal of improvements.

(a) The lessee may terminate the lease, if he is not in default thereunder, by filing a notice of relinquishment of the lease in the proper land office. Any lease may be canceled where the lessee has failed to comply with any of the terms, covenants, and stipulations of the lease, or to abide by any of the regulations in this part, and such default has continued for 30 days after written notice thereof.

(b) No refund will be made of rental for the unexpired term of a lease relinquished by the lessee or canceled for cause.

(c) Upon the termination, cancellation, or expiration of a lease, the lessee will have a period of 90 days within which to remove his improvements from the land or to make other disposition thereof. If the improvements are disposed of to a person other than a subsequent lessee they must be removed from the land within the 90-day period, otherwise the improvements will become the property of the United States.

Subpart 2914—Mining Claim Occupancy Act

NOTE: Act expired but regulations retained for adjudication of pending applications.

SOURCE: 35 FR 9665, June 13, 1970, unless otherwise noted.

§ 2914.0-3 Authority.

The Act of October 23, 1962, as amended (76 Stat. 1127; 30 U.S.C. 701-709) provides that any conveyance of less than a fee made under the Act shall include provision for removal from the tract of any improvements or other property of the applicant at the close of the period for which the conveyance is made, or if it be an interest terminating on the death of the applicant, within one year thereafter.

§ 2914.0-7 Cross reference.

The general requirements of law, regulation and procedure under the Mining Claim Occupancy Act are contained in Part 2550 of this chapter.

Subpart 2916—Alaska Fur Farm

SOURCE: 35 FR 9665, June 13, 1970, unless otherwise noted.

§ 2916.0-3 Authority.

The act of July 3, 1926 (44 Stat. 821, 48 U.S.C. secs. 360, 361), authorizes the Secretary of the Interior to lease public lands on the mainland of or islands in Alaska, with the exception of the Pribilof Islands, for fur farming, for periods not exceeding ten years.

Illustration III

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR LAND FOR RECREATION OR PUBLIC PURPOSES

(Act of June 14, 1926, as amended; 43 U.S.C. 869; 869–4)

FORM APPROVED
OMB NO. 42–R1223

Date	Time Received

Serial Number

1. Applicant's name and address *(include zip code)*

2. Give legal description of lands applied for *(include metes and bounds description, if necessary)*

SUBDIVISION	SECTION	TOWNSHIP	RANGE	MERIDIAN

County of	State of	Containing acres

a. This application is for ☐ Lease ☐ Purchase *(If Lease, indicate years)*

b. Proposed use is ☐ Public Recreation ☐ Other Public Purposes *(If Other Public Purposes, specify)*

4. Are three copies of the statement required by 43 CFR 2741.3 attached? ☐ Yes ☐ No

5. If applicant is State or policital subdivision thereof, cite your statutory or other authority to hold land for these purposes

6. Have you attached a copy of your authority for filing this application and to perform all acts incident thereto? ☐ Yes ☐ No

7. Have you enclosed the required $10 nonrefundable filing fee? ☐ Yes ☐ No

8. If land described in this application has not been classified for recreation and/or public purposes pursuant to the Recreation and Public Purposes Act, consider this application as a petition for such classification.

(Signature of Applicant or Authorized Officer)

(Date)

(Title)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

Form 2740–1 (January 1978)

GENERAL INSTRUCTIONS

1. Type or print plainly in ink.

2. Submit application and related plans, in *triplicate*, to the proper BLM State Office for the State in which the land is located.

3. Study controlling regulations which are found in 43 CFR 2740 *(Sales)* and 43 CFR 2912 *(Leases)*.

4. A copy of *Compliance Report, Title VI Civil Rights Act* (Form 1140–5) must be attached to this application.

5. If applicant is non-governmental association or corporation, attach a copy of your charter, articles of incorporation or association, or other creating authority. If this information has been previously filed with any BLM office, refer to previous filing by date, place, and case serial number.

6. If applicant is non-governmental association or corporation, attach a copy of your authority to operate in the State where the lands applied for are located. If previously filed with any BLM office, refer to previous filing by date, place, and case serial number.

SPECIFIC INSTRUCTIONS

(Items not listed are self-explanatory)

Item

2 If land is surveyed, give complete legal description. If land is unsurveyed, description should be by metes and bounds connected, if feasible, by course and distance with a corner of public land survey. If possible, approximate legal subdivisions of unsurveyed lands should be stated. Acreage applied for must not exceed that specified by regulations.

3a Generally, title to lands will not be granted upon initial approval of an application. In order to assure proper development or use plans, the general practice will be to issue a lease or lease with option to purchase after development is essentially completed. In any case, term of lease may not exceed 20 years for non-profit organizations or 25 years for governmental agencies, instrumentalities or political subdivisions.

b Leases and patents under this act are conditioned upon continuing public enjoyment of the purposes for which the land is classified. The plan of development, use, and maintenance must show, at a minimum:

a. A need for proposed development by citing population trends, shortage of facilities in area, etc.
b. That the land will benefit an existing or definitely proposed public project authorized by proper authority.
c. Type and general location of all proposed improvements, including public access (roads, trails, etc.). This showing may take the form of inventory lists, maps, plats, drawings, or blueprints in any combination available and necessary to describe the finished project. Site designs should be provided for intensive use sites and general information about improvements existing or planned on lands within the overall project.
d. An estimate of the construction costs, how the proposed project will be financed, including a list of financial sources, and an estimated timetable for actual construction of all improvements and facilities.
e. A plan of management to include operating rules, proposed source and disposition of revenues arising from the proposed operation, personnel requirements, etc.
f. A specific maintenance plan to include, for example, sewage and garbage disposal, road maintenance, upkeep and repair of grounds and physical facilities, etc.
g. Applications for solid waste disposal sites must comply with guidelines established by the Environmental Protection Agency (40 CFR 240 and 241) and must include a detailed physical description of the site (including a map showing 5-foot contours at a scale of 1 inch = 200 feet), description of ground water situation, soil characteristics and management plan.

6 This may consist of a copy of a delegation of authority, resolution or other evidence of authority from the governing board of the applicant's organization, copy of the by-laws of the organization, or the like.

☆ U.S. Government Printing Office: 1978-782-046/200 Reg. 8

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Illustration IV

BIG OAK FLAT

SOLID WASTE DISPOSAL SITE

ENVIRONMENTAL ANALYSIS

Prepared by the Tuolumne County Planning Department

August, 1975

RECEIVED
AUG 25 1975
TUOLUMNE COUNTY
ROAD DEPT.

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I DESCRIPTION OF THE PROPOSED ACTION

The project site is located in the northwest ¼ of Section 30, Township 1 south, Range 16E, and can be reached by motor vehicle by driving approximately 3 miles from Highway 120 on Merrell Road and Jackass Creek Road.

The site is an area of approximately 10 acres and has been used most recently as an open burning dump and is currently used as a modified land fill dump. The dump is used primarily for disposal of commercial and residential refuse by a population of approximately 1,100 persons from a service area of 80-100 square miles. The dump has been operated as a modifield land fill solid waste disposal area since open burning was halted in December 31, 1974. The present dump (modified land fill) is proposed to operate for a period of 5 years with an average daily deposit of 250-300 cubic feet of waste. The dumping will occur on a daily basis and covering is proposed once per week. The operation, maintenance and supervision of the dump will be the responsibility of Tuolumne County.

The storage collection and disposal of solid waste is one of the major problems common to all urban areas. These unwanted materials and substances discarded by nearby residents must be disposed of in a safe, practical, accessible and economically feasible way. The problem being to find a method which reaches all, or most of, these requirements.

Change over to an improved disposal system is difficult and expensive, particularly for a small, rural County such as Tuolumne. In 1971 Tuolumne County's solid waste operation cost approximately $22,000 annually. In 1974 these costs have sky rocketed to $322,000 (an increase of more than 1,000%!) This expense must be born by a County-wide population of approximately 25,000 persons. The 1974 solid waste costs to the County equitably divided come to nearly $13.00 annually for every man, woman and child in the County. Costs still climb at an increasingly wider margin over population.

Tuolumne County has historically depended upon a number of local solid waste disposal sites serving individual communities throughout the County.

A. Alternatives to the Proposed Action

1. Drop Box Operation -
   This alternative would involve installing a drop box similar to others in use in the County at a cost of approximately 40,000 ($1.60 per person County-wide). Since this site is a 53 mile round trip from the Sonora refuse site, over the Tuolumne River Canyon and twisting, steep roads, the vehicle and time costs for transportation may be prohibitive.

2. Sanitary Landfill -
   This alternative while being technologically available is financially unfeasible. In view of the large costs of constructing and maintaining the Sonora unit (now in operation) the costs prohibit the construction of such a site.

II DESCRIPTION OF THE EXISTING ENVIRONMENT

The project site is located in the Sierra Nevada Range of California at an elevation of approximately 3,000 feet. Rainfall in the area varies from 35-38" annually with snowfall occurring in the winter months. More than 50% of the precipitation falls in the months of December - February.

A. Non-living Components

This area is characterized by relatively shallow rocky soils on slopes up to 30% (on the north and northwest sides of the site). The general slope of the land is to the west and the central drainage ravine roughly follows this direction. The site is on a somewhat exposed slope and thus winds continually gust across the site raising dust and blowing trash about.

The drainage (ravine) which carries runoff from the dump (during storms) runs approximately 1.5 miles before entering Big Jackass Creek about 5 miles above Moccasin Reservoir which in turn drains into Don Pedro Reservoir. Runoff from the dump is probably purified to some extent as it tranverses the 1.5 miles between the dump and the creek. Confinement of any runoff to the dumpsite would help minimize the potential for water pollution resulting from dump operations.

The nearest town is approximately 3 miles away (Groveland = 330 persons, and Big Oak Flat = 100 persons). There is a subdivision (Yosemite Highlands) approximately one mile from the site (on the road to highway 120) but as yet few homes have been constructed.

The Groveland dump is situated on a gently sloping peneplain that is geologically very old. The soils and underlying sedimentary schists of the Calaveras formation have been subjected to a long period of chemical and physical weathering, and leaching by percolating groundwater. As a result, the soils are somewhat shallow and highly acid, and the rock is well weathered to depths as great as 10 to 20 feet. Ripping these weathered rocks with heavy equipment should provide fill material with a high proportion of "fines".

Within and surrounding the dump site are two soil series: Bandarita and Madonna. Bandarita soils have pale brown, strongly acid gravelly silt loam surface horizons and yellowish red, very strongly acid silty clay and silty clay loam subsoils. On the western ½ of the dump site, Bandarita soils predominate and average 30 inches deep to weathered rock. On the eastern 3/4 of the site, Bandarita soils comprise about 65% of the area, and average 18 inches deep, with eroded surfaces. The remainder of this area consists of Madonna soils averaging 8 to 10 inches deep to weathered rock. Madonna soils have pale brown, moderately acid loam surface horizons, and brown, moderately acid loam subsoils.

The following particle size analyses are from samples taken near the dump site. The Bandarita sample site is about 500 feet east, and the Madonna sample site is about 7/8 mile northeast of the dump.

Bandarita

Depth	% Gravel	% Sand	% Silt	% Clay
0-1"	32.0	26.2	58.7	15.1
1-4"	25.4	28.7	55.4	15.9
4.10"	36.8	26.7	52.0	21.3
10-21"	11.5	17.0	31.0	52.0

Madonna

Depth	% Gravel	% Sand	% Silt	% Clay
0-6"	41.8	32.6	53.4	14.0
6-18"	53.8	32.7	52.1	15.2
18-26"	67.1	35.9	49.3	14.8

USDA size sepa. .ions are: Gravel is larger th 2mm; Sand is 2mm to 0.050mm; Silt is 0.050mm to 0.002mm; Clay is less than 0.002mm.

In these analyses, % gravel is figured on the whole sample. Sand, silt and clay percentages are figured on the "fine earth" fraction of the sample, smaller than 2mm.

B. Living Components

The project site is on a hillside of relatively sparse vegetation when compared to the ravine below. The primary vegetative species present are: Ponderosa Pine, Sugar Pine, Black Oak, Yerba Santa, Manzanita, Fescue and Barley.

Wildlife species known to frequent the area include: deer, bobcat, mountain lion, skunks, various rodents and reptiles and birds. The area is not known to contain rare or endangered species. The mountain lion, however, is considered by many to be threatened and close to being an endangered species as more and more of its habitat is used for urbanization. The predominant wildlife species on the site is the common fly. Both the flies and various rodents act as disease carriers (to man) and this contributes to a potential health problem.

C. Ecological Interrelationships

The presence and use of the area as a dump has altered the local ecological relationships of animal somewhat. The presence of refuse and its assorted food supply to rodents, scavengers, and other omnivorous animals provides a food supplement to these species. This site with its open vegetation, and exposure would also indicate predators may have good success here feeding upon wildlife species scavenging in the refuse.

Thus natural relationships have been altered somewhat by the presence of the dump as a year round food supply.

D. Human Values

The value of the site is that it is now an accepted dump site and people have established a dependence on the site. While it is true that those persons dumping may not care if the site is a landfill or a drop box, the resulting cost increase of the latter option would be a controversial local issue.

III ANALYSIS OF PROPOSED ACTIONS AND ALTERNATIVES

A. Summary of Impacts

1. Dump runoff will be present in the ravine during wet periods.

2. Topographic alteration of the site due to the cut and fill operation will result in a leveling effect on the hill.

3. Cut and fill operations will generate dust due to the nature of the work and the soils on the site. The wind, which blows rather steadily, will probably spread the dust up and down the adjoining hillsides to some extent.

4. The dump presently accidentally (or otherwise) catches fire from time to time and burning trash is blown about by the wind.

B. Mitigation Measures

1. Increase the fill occurrance to twice weekly during the late spring, summer, and early fall months. This would reduce odors somewhat, reduce fire potential and limit the time refuse is exposed.

2. Use water sprinkling to reduce dust. This mitigation measure would reduce on site, and nearby dust as well as reduce fire hazards on the site. However, the costs incurred in sprinkling the site daily may be prohibitive.

3. Close the site during the period of actual fill operations. This would be a safety measure to prevent possible injury to anyone careless enough to get in the way of the heavy equipment operators.

C. Discussion of Alternatives

The actual alternatives to this project are limited to a drop box operation, and conversion of the site to a sanitary landfill operation. It is the opinion of Mr. Walsh, Tuolumne County Road Commissioner and Manager of the County's solid waste disposal program, that both these are too expensive for the County at the present time. The conversion from open burning dumps to land fill dumps alone has involved vast increases in the County's cost of operations. This, coupled with the fact that no severe or serious sociological or environmental impacts are associated with the proposed operation make the benefits gained, to costs incurred relationship increasingly high for serious consideration of alternatives.

D. Irreversible and Irretrievable Committment of Resources

By operating the dump as a modified land fill site the primary losses and committments would be recyclible materials which were not recycled (although users of the site report people come to the site to collect aluminum cans) and the use of precious fuel oils in the operation of the heavy equipment in operation of the site.

IV PERSONS, GROUPS, AND AGENCIES CONSULTED

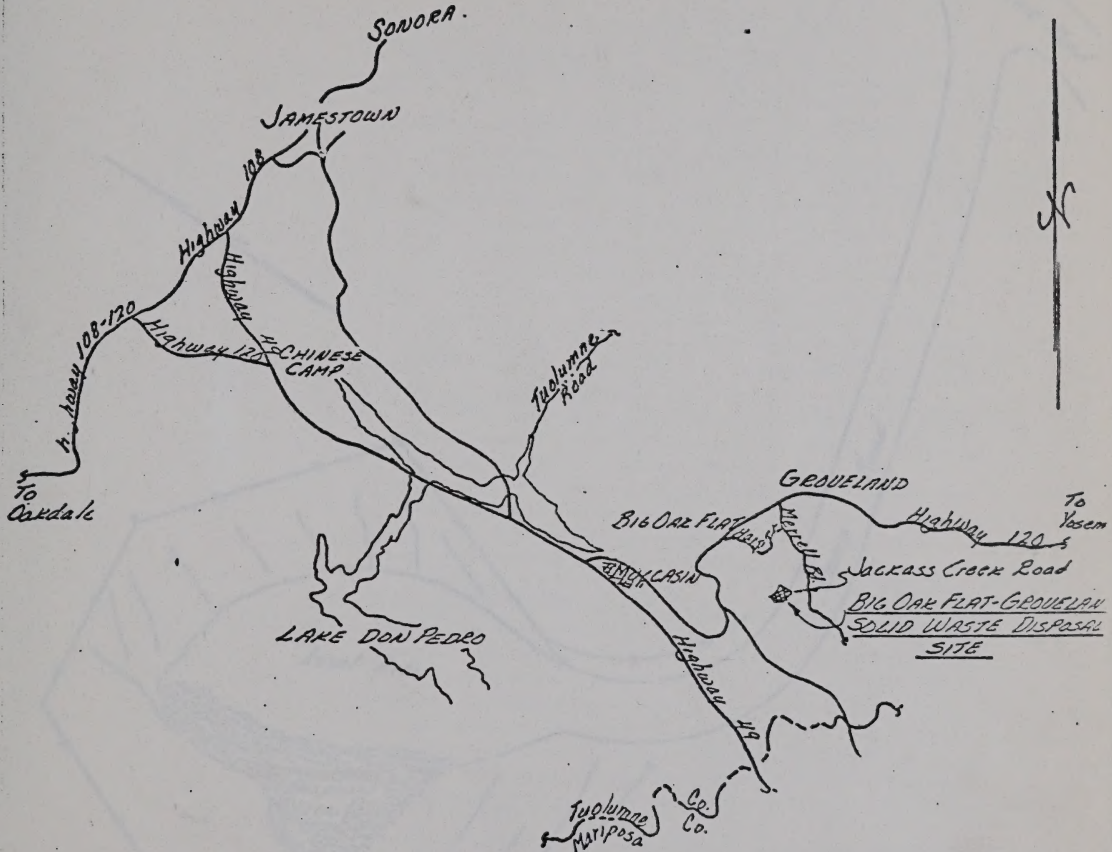
John Walsh, Tuolumne County Road Commissioner
Earl Nelson, Former Tuolumne County Planning Director
Benjamin F. Smith, California Cooperative Soil-Vegetation Survey
On site interviews with users.

V INTENSITY OF PUBLIC INTEREST

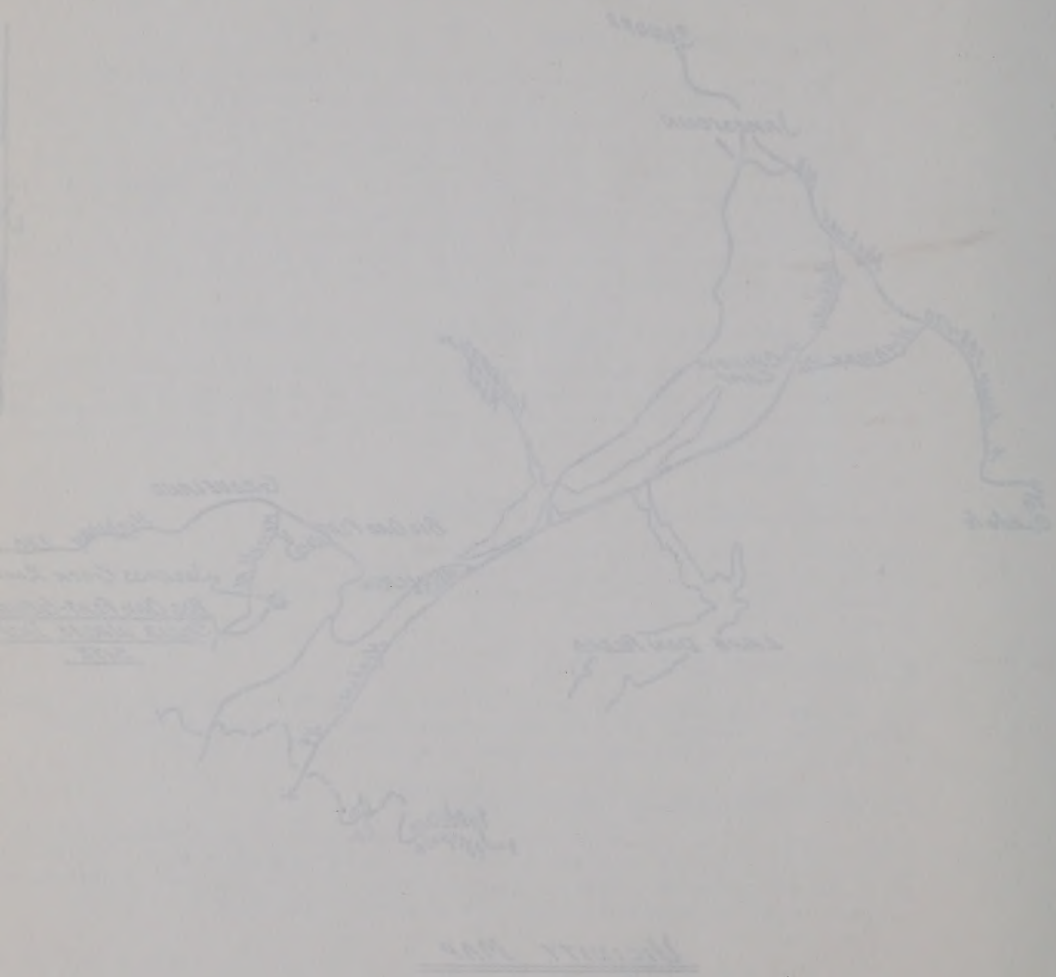
Most of the users showed approval of the site as a dump and hoped the site remained in operation. Central areas of concern were fires which could be caused from accidental fires in the dump and spread by burning windblown embers.

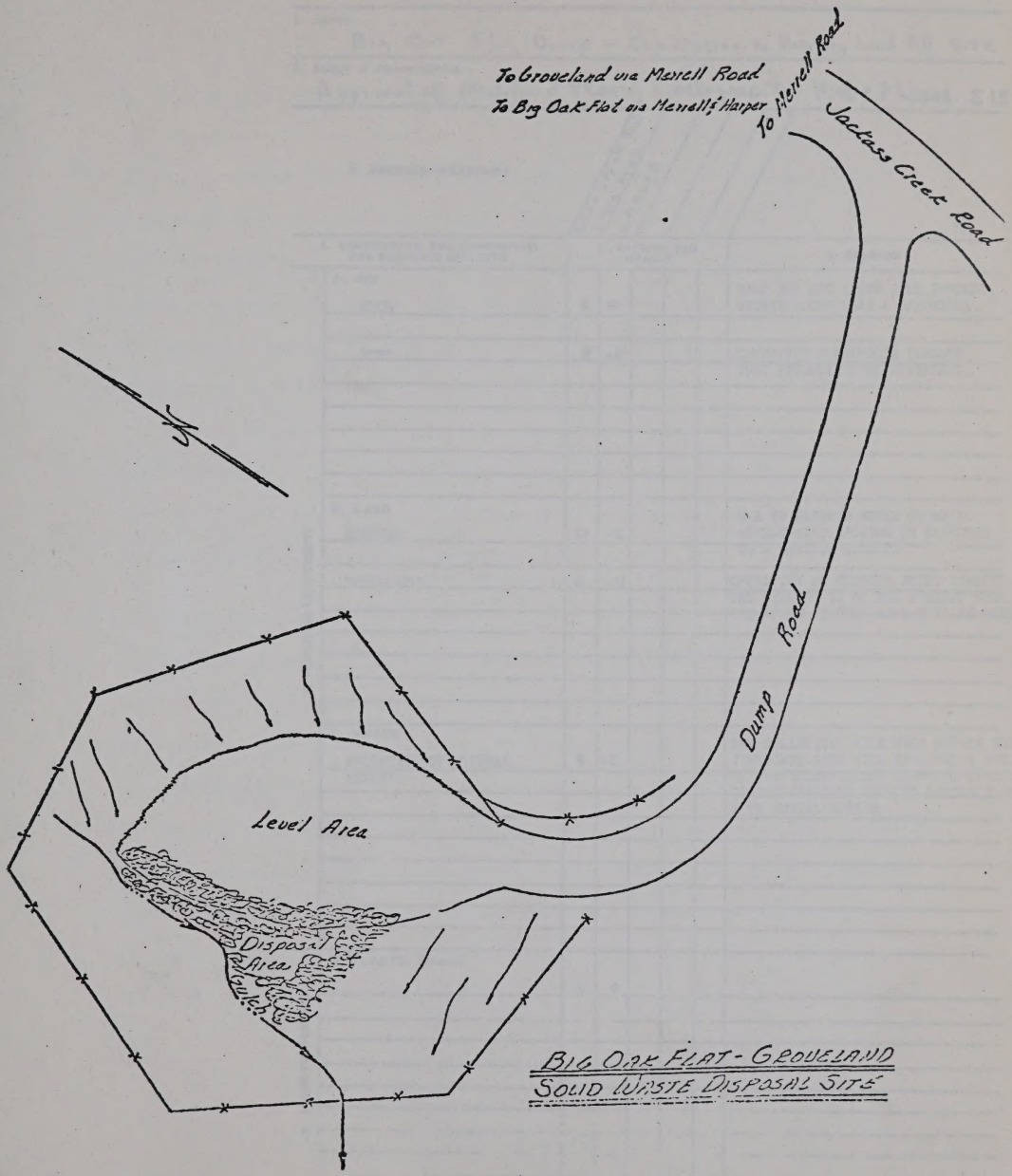
VI RECOMMENDATION ON ENVIRONMENTAL STATEMENT

Early reconnaissance and field survey impressions indicate environmental impacts would be relatively localized (barring wildfire, of course) and since little additional pertinent data would be gained in the preparation of an E.I.S. over the document in hand, it is recommended no E.I. S. be prepared at this time.

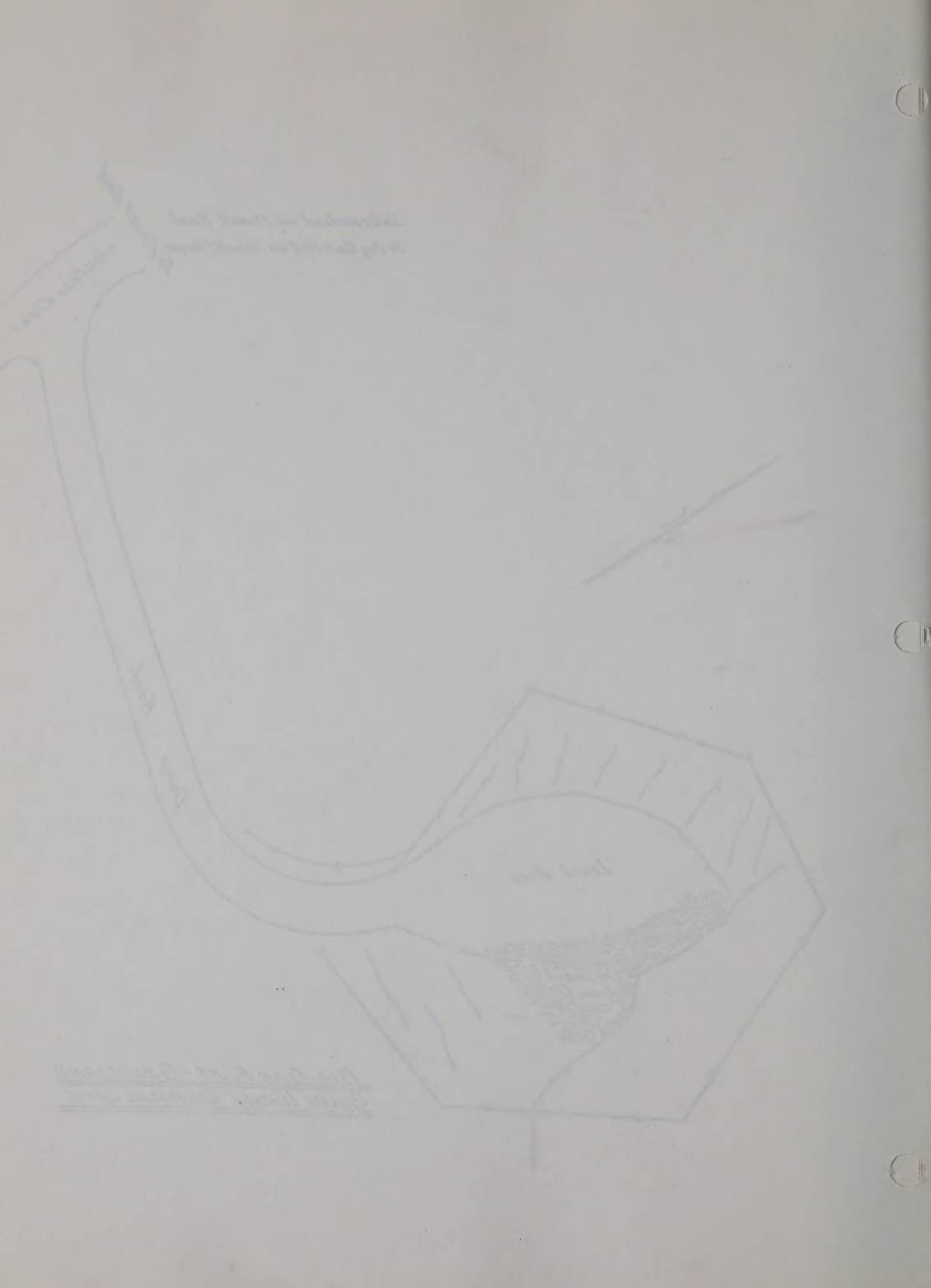


VICINITY MAP





BIG OAK FLAT - GROVELAND
SOLID WASTE DISPOSAL SITE



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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ENVIRONMENTAL ANALYSIS WORKSHEET

1. Action
Big Oak Flat Dump - Conversion to Sanitary Land Fill Site

2. Stages of implementation
Approval of Modified Plans of Development - Replaces SIS

3. DISCRETE OPERATIONS: Conversion and Operation; Closure

4. COMPONENTS, SUBCOMPONENTS, AND ELEMENTS IMPACTED	5. ANTICIPATED IMPACTS					6. REMARKS
I. NONLIVING COMPONENTS						
A. AIR						
ODOR	M	M+				DROP BOX OPERATION WILL INVOLVE HIGHER ODORS THAN A CUT/COVER.
DUST	H	-L				CUT/COVER OPERATIONS INVOLVE DUST PRODUCTION BY EQUIPMENT.
B. LAND						
EROSION	L+	-L				DUE TO EXPOSED SOILS ON SITE ACCELERATED EROSION IS EXPECTED TO A LIMITED EXTENT.
TOPOGRAPHY	H	-M				OPERATION OR CLOSURE WOULD INVOLVE THE FILLING IN OF THE PRESENT SITE OPERATION HOWEVER WILL INVOLVE MORE
C. WATER						
POLLUTION TO NATURAL RUNOFF	H	-L				THE POLLUTION WHILE HIGH WITHIN THE IMMEDIATE AREA WILL BE LIMITED DUE TO THE INTERMITTENT CHARACTERISTICS OF THE DRAINAGE AND THE DISTANCE TO A PERENNIAL STREAM.
II. LIVING COMPONENTS						
A. PLANTS (Aquatic)	0	0				

II. General Information and Background Data

The subject land is located within a fairly well blocked area of national resource land in south central Tuolumne County. The parcel was classified for Recreation and Public Purpose in 1967 and a 25 year lease for a sanitary burn and fill waste disposal site was issued to Tuolumne County. Under pressure from BLM, to comply with the requirements of the Environmental Policy Act, the county has requested a change of use to convert the site to a modified landfill operation.

This report will cover only those items pertinent to the change of use. For other information and site data refer to the Land Report of January 5, 1967, contained in the case file. Refer also to the Environmental Analysis Report prepared by the county.

III. Site Data

Past management of the site has consisted of unrestricted open dumping, periodic burning, and occasional covering. Recent improvements in management have included a reduction in burning, more frequent covering and controlled access. Several discussions with the county have been held to arrive at a plan of development and management consistant with the regulations promulgated pursuant to the Environmental Policy Act. The primary problems appear to be open burning, infrequent cover and compaction, and drainage from the site. The county is faced with skyrocketing costs and a limited tax base. The cost of garbage disposal in Tuolumne County has increased over

Illustration V

Form 2060–1
(January 1969)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

I. LAND REPORT TITLE PAGE

State	District	
California	Folsom	
County	Resource area	Planning Unit
Tuolumne	Bay-Sierra	Tuolumne-Mariposa
Type of Action		Serial Number
R&PP Change of Plan		S-157
Applicant's name	Address *(include zip code)*	
County of Tuolumne	Road Department Sonora, CA	

Date(s) of examination October 28, 1975

LANDS INVOLVED

TOWNSHIP	RANGE	MERIDIAN	SECTION	SUBDIVISION	ACRES
1 S.	16 E.	Mt. Diablo	33	Portion of lots 3, 5, and 6	Approx. 10

Purpose of report

Report on application to change R&PP lease for a dump site to a modified landfill operation.

Prepared by	Title	Date of report
Philip Beck	Realty Specialist	2-2-76

GPO 857 - 100

1000% in the past four years. In view of these facts the county has prepared a plan for a modified landfill operation to minimize costs while meeting the minimum requirements of the Environmental Policy Act. The county has estimated that sufficient cover exists to operate the site as a modified landfill for five years.

The plan of management and development proposed by the county has been reviewed by the Environmental Protection Agency. They have made recommendations relative to any action that would allow the proposed change of use.

IV. Land Use Capabilities of the Land

The subject land has potential value for wildlife habitat, timber production, watershed protection, public purposes, residential occupancy and open space. The present dedication of the land to public purposes use as a disposal site pretty much excludes other potential uses. With proper restoration upon conclusion of the current use the potential values still exist.

Negotiations to obtain compliance with the regulations has generated considerable concern about closure of the site among the local residents. Alternate sites are many miles away and closure of the site would impact the local citizens.

V. Environmental Impacts and Mitigating Measures

The primary environmental impacts of the site as indicated by the EAR and the Environmental Protection Agency would include:

(1) Contamination in runoff from the site into Moccasin Reservoir;

(2) Topographic alteration of the site due to the cut and fill operation;

(3) Dust created as a result of cut and fill operations;

(4) Fire from uncontrolled burning creating air pollution and a hazard of wildfire;

(5) Spread of disease and contamination due to Vectors.

Measures to mitigate these impacts could include:

(1) Construction of a settling pond in the drainage below the site;

(2) Require smooth, natural contours;

(3) Sprinkling to reduce dust;

(4) Establishing and enforcing rules prohibiting burning;

(5) Requiring frequent cover and compaction to break the Vector cycle. The EPA recommends a minimum of twice a week during periods of warm weather.

VI. Land-Use Analysis and Conclusions

The subject land has been classified and developed for public purposes use as a disposal site. Under the criteria of 43 CFR 2430.2(b) lands found

to be valuable for public purposes will be considered chiefly valuable for public purposes. 43 CFR 2410.1(~~d~~ a) requires that the lands be physically suitable for the purposes proposed. Therefore, continued use of the site as a disposal site is proper so long as sufficient cover remains to operate the site in accordance with the requirements of the Environmental Policy Act.

Appropriate stipulations are included in the addenda.

VII. Recommendations

A. Recommendation Statement

It is recommended that the change of use be allowed in accordance with the plan of development and management as per the county letter of September 22, 1975, and the stipulations required herein.

B. Rationale

(1) The site is developed and needed for continued public purposes use as a disposal site. Under the criteria of 43 CFR 2430.2(b) lands found to be valuable for public purposes will be considered chiefly valuable for public purposes.

(2) The site can be operated as a modified landfill in compliance with the minimum requirements for waste disposal sites and is physically suited to this use in accordance with the criteria of 43 CFR 2410.1[illegible].

2/2/76
Date

Signature Philip Beck
Realty Specialist

I have reviewed the land report for S-157, R&PP change of use, dated February 2, 1976.

I believe all resource values have been adequately considered (and concur) (but do not concur) in the recommendations made in the land report.

Area Manager — Date: 2-3-76

I (do not) concur in the recommendations made in the land report.

Acting District Manager — Date: 2/9/76

STIPULATIONS

(1) The lessee shall post in a conspicuous manner all rules and regulations pertinent to the use of this site. They shall include rules specifically prohibiting the burning of material on the site or the depositing of burning material.

(2) It shall be the responsibility of the lessee to monitor use of the site to regulate or prevent the depositing of special wastes. The following special wastes require the specific approval of the Folsom District Manager for acceptance at the site: hazardous wastes, infectious institutional wastes, highly flammable or volatile substances, raw animal manure, septic tank pumpings, raw sewage sludge.

(3) The lessee is hereby required to fence the site in a manner sufficient to close the site as needed to maintain the site or regulate its use. Sufficient drop box capacity will be provided at the site entrance to accommodate deposits during periods when the site is closed.

(4) During the periods of June 1 through September 15 of each year the lessee shall compact the deposited waste and cover with a compacted earthen cover at a minimum of twice weekly. During the remainder of the year cover and compaction shall be required at least once weekly. Each earthen cover shall be applied to a compacted thickness of not less than six inches.

(5) The lessee shall be required to construct an earth fill reservoir in the drainage below the site for the containment and settling of leachate from the disposal site. Construction shall be completed within six months of the effective date of this change of use.

(6) The lessee shall be responsible for cleaning up litter than may accumulate on the approaches and within the site to the satisfaction of the Folsom District Manager.

(7) Closure of the site will be required when the supply of cover material is exhausted. Closure will be in accordance with pertinent regulations that may be in effect at that time and will be the responsibility of the lessee. Except as otherwise provided by regulations then in effect, cover and contouring will be in accordance with the lessees letter and map of September 22, 1975.

(8) Additional measures such as seeding, fertilizing, water barring, etc., may be required by the Folsom District Manager to restore the site to an acceptable condition.

(9) Other stipulations as necessary to comply with the requirements of ~~43~~ 40 CFR ~~241~~ 241 may be imposed on the lessee by the Folsom District Manager.

(10) Operation of the site in compliance with the provisions of the Occupational Safety and Health Act of 1970 shall be the responsibility of the lessee.

Illustration VI

Form 2912–1
(January 1976)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Serial Number

RECREATION OR PUBLIC PURPOSES LEASE
Act of June 14, 1926, as amended (43 U.S.C. 869 *et. seq.*)

This lease entered into on this day of , 19 , by the United States of America, the lessor, through the authorized officer of the Bureau of Land Management, and

, hereinafter called the lessee, pursuant and subject to the terms and provisions of the Recreation and Public Purposes Act and to all reasonable regulations of the Secretary of the Interior now or hereafter in force when not inconsistant with any express and specific provisions herein, which are made a part hereof,

WITNESSETH:

Sec. 1. The lessor, in consideration of the rents to be paid and the conditions to be observed as hereinafter set forth, does hereby grant and lease to the lessee the right and privilege of using for the purposes hereinafter set forth in the following-described lands:

containing acres, together with the right to construct and maintain thereon all buildings or other improvements necessary for such use for a period of years, the rental to be $ per annum. If, at the expiration date of the lease the authorized officer shall determine that the lease may be renewed, the lessee herein will be accorded the privilege of renewal upon such terms as may be fixed by the lessor. The lessee may use the premises for

Sec. 2. There are reserved to the United States all mineral deposits in said lands, together with the right to mine and remove the same under applicable laws and regulations to be established by the Secretary of the Interior.

Sec. 3. The lessor reserves the right of entry, or use, by

(a) any authorized person, upon the leased area and into the buildings constructed thereon for the purpose of inspection;

(b) Federal agents and game wardens upon the leased area on official business;

(c) the United States, its permittees and licensees, to mine and remove the mineral deposits referred to in Sec. 2, above.

Sec. 4. In consideration of the foregoing, the lessee hereby agrees:

(a) To improve and manage the leased area in accordance with the plan of development and management designated as

and approved by an authorized officer on
or any modification thereof hereinafter approved by an authorized officer, and to maintain all improvements, during the term of this lease, in a reasonably good state of repair.

(b) To pay the lessor the annual rental above set forth in advance during the continuance of this lease.

(c) Not to allow the use of the lands for unlawful purposes or for any purpose not specified in this lease unless consented to under its terms; not to prohibit or restrict, directly or indirectly, or permit its agents, employees, contractors (including, without limitation, lessees, sublessees, and permittees), to prohibit or restrict the use of any part of the leased premises or any of the facilities thereon by any person because of such person's race, creed, color, sex, or national origin.

(d) Not to assign this lease or to change the use of the land, without first receiving the consent of the authorized officer of the Bureau of Land Management.

(e) That this lease may be terminated after due notice to the lessee upon a finding by the authorized officer that the lessee had failed to comply with the terms of the lease; or has failed to use the leased lands for the purposes specified in this lease for a period of_____consecutive years; or that all or part of the lands is being devoted to some other use not consented to by the authorized officer; or that the lessee has not complied with his development and management plans referred to in subsection 4(a).

(f) That upon the termination of this lease by expiration, surrender, or cancellation thereof, the lessee, shall surrender possession of the premises to the United States in good condition and shall comply with such provisions and conditions respecting the removal of the improvements of and equipment on the property as may be made by an authorized officer.

(g) To take such reasonable steps as may be needed to protect the surface of the leased area and the natural resources and improvements thereon.

(h) Not to cut timber on the leased area without prior permission of, or in violation of the provisions and conditions made by an authorized officer.

(i) That nothing contained in this lease shall restrict the acquisition, granting, or use of permits or rights-of-way under existing laws by an authorized Federal officer.

Sec. 5. *Equal Opportunity Clause.* During the performance of this contract, the lessee agrees as follows:

(a) The lessee will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The lessee will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The lessee agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

(b) The lessee will, in all solicitations or advertisements for employees placed by or on behalf of the lessee, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) The lessee will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the lessee's commitments under Section 202 of Executive Order 11246 of September 24, 1965, as amended, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The lessee will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The lessee will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, as amended, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the lessee's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this permit may be cancelled, terminated or suspended in whole or in part and the lessee may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, as amended, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of Sept. 24, 1965, as amended, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The lessee will include the provisions of Paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, as amended, so that such provisions will be binding upon each subcontractor or vendor. The lessee will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: *Provided, however,* That in the event the lessee becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the lessee may request the United States to enter into such litigation to protect the interests of the United States.

Sec. 6. The lessee may surrender this lease or any part thereof by filing a written relinquishment in the appropriate BLM office. The relinquishment shall be subject to the payment of all accrued rentals and to the continued obligation of the lessee to place the lands in condition for relinquishment in accordance with the applicable lease terms in subsections 4(f) and 4(g) and the appropriate regulations.

Sec. 7. The lessee further agrees to comply with and be bound by those additional terms and conditions identified as

and which are made a part hereof.

Sec. 8. No Member of, or Delegate to, the Congress, or Resident Commissioner, after his election or appointment, and either before or after he has qualified, and during his continuance in office, and no officer, agent, or employee of the Department of the Interior, except as otherwise provided in 43 CFR, Part 7, shall be admitted to any share or part of this lease, or derive any benefit that may arise therefrom, and the provisions of Title 18 U.S.C. Sections 431–433, relating to contracts, enter into and form a part of this lease, so far as the same may be applicable.

FOR EXECUTION BY LESSEE

IN WITNESS WHEREOF:

(Signature of Lessee's Authorized Officer)

(Signature of Witness)

(Date)

FOR EXECUTION BY THE UNITED STATES

THE UNITED STATES OF AMERICA

By (Authorized Officer)

(Title)

(Date)

GPO 833-097

Illustration VII

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECREATION AND PUBLIC PURPOSE
ACT GRANT COMPLIANCE CHECK

Serial No.	
☐ Patent ☐ Lease	
Field check *(date)*	
State	District

1a. Name and address of Grantee

b. Type
☐ Public Agency
☐ Nonprofit

2. Legal description

SECTION	TOWNSHIP	RANGE	MERIDIAN

3. Has grantee complied with all terms and conditions of the grant including	YES	NO
a. Used for authorized purpose?		
b. Nondiscrimination in employment and use of facilities?		
c. Reasonable charges for use of facilities?		
d. Management in accordance with approved plan?		
e. Premises painted and in good repair?		

Explain any "no" answers below

Field check by *(signature)*	Title	Date
Approved by *(signature)*	Title	Date

Form 2740–3 (May 1970) GPO 858-255

Illustration VIII

orm 2740–4
ebruary 1978)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECREATION AND PUBLIC PURPOSE COMPLIANCE CHECK TRANSMITTAL

☐ TO: District Manager,

FROM: State Office,

TO: State Office,

☐ FROM: District Manager,

SUBJECT: Recreation and Public Purposes Act Compliance Check

Recreation Public Purposes Grant *(Serial No.)* , *(Name of Grantee)* ,
is due for a compliance check as of *(date)* .
May we have your recommendations by *(date)* .

_____
(Signature)

- - - -

Illustration IX

IN REPLY REFER TO:
9221.2 (350)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

April 13, 1978

Instruction Memorandum No. 78-203
Expires 9/30/79

To: All SD's and District Managers

From: Deputy Assistant Director, Resources

Subject: Emergency Pesticide Proposals

On rare occasions, a pest problem may arise which was not anticipated but which necessitates a pesticide application for the protection of our resources. The intent of this memorandum is to provide guidance on how to obtain expeditious handling of those emergency needs.

1. The District Manager will propose the needed project and provide a timetable needed for application. (Submit on Federal Working Group for Pesticide Management Forms 1 and 2.)

2. If the State Director agrees the project is an emergency, the proposal will be transmitted via Facsimile Machine to both the Director (350) and the Service Center Director (D-350) simultaneously. Preparation of an Environmental Assessment Record should begin at that time.

3. The Watershed Staff (D-350) will review the proposal and provide the Director (350) with their recommendation by telephone.

4. At that point, WO-350 will obtain and transmit (by Facsimile Machine), a Bureau decision to the State Director, unless the proposal falls in category 1 or 2, as mentioned in Office of Environmental Project Review Memorandum to Heads of All Bureaus and Offices, dated November 3, 1977. These proposals must be reviewed by the Department of the Interior Pesticide Review Committee.

5. If the proposal must be reviewed by the Department, an additional 3 weeks should be allowed for the review. Otherwise, it is anticipated that a Facsimile response could be sent within a maximum of 3 weeks, after the Facsimile emergency request leaves the State Office.

IN REVOLUTION BICENTENNIAL A.D. 1776-1976

This is not proposed as a supplement to good planning, but rather as a method for rectifying a problem that may occur despite good planning. Because only a few projects can be handled in this manner, we ask that you limit this type of request.

For the quickest response, the use of nonrestricted pesticides and restricting the project to less than 640 acres is suggested. These actions will normally dispense with the need for a Departmental review.

RECEIVED
APR 27 8 20 AM '77
CALIF. STATE OFFICE
SACRAMENTO, CALIF.

[6560-01]

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 257]

[Docket No. 4004; FRL 830-4]

SOLID WASTE DISPOSAL FACILITIES

Proposed Criteria for Classification

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: The proposed regulations contain minimum criteria for determing which solid waste land disposal facilities shall be classified as posing no reasonable probability of adverse effects on health or the environment. The regulations are required by the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976. Under the 1976 Act, all facilities which do not meet these criteria are prohibited. Any existing facility not meeting these criteria must be closed or upgraded according to a State-established compliance schedule containing an enforceable sequence of actions leading to compliance. The regulations are also proposed under the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, providing guidelines for the disposal and utilization of sludge. Under the 1977 Act, the owner or operator of any publicly owned treatment works must use or dispose of sludge in accordance with these criteria, if the owner or operator chooses to use or dispose of the sludge on land. Implementation of these criteria is expected to encourage the recovery and utilization of solid waste by eliminating environmentally unacceptable disposal practices.

EPA desires comments from the general public on these proposed criteria. EPA is particularly interested in comments on: (1) Adequacy of the criteria in providing for the protection of public health and the environment: (2) practicality of implementation of the criteria (including availability of technologies and methods to comply with the criteria and to determine compliance; and the feasibility of monitoring, administrative, and enforcement programs); (3) potential impacts on segments of our society and economy: and (4) any recommended alternatives.

DATE: The public comment period on the proposed criteria will extend at least to, May 8, 1978.

PUBLIC HEARING: MARCH 1, 1978, SAN DIEGO, CALIF.

For additional information relating to public hearings see "public participation" section under supplementary information.

A draft environmental impact statement/economic impact analysis (EIS/EIA) on the criteria should be available for public review in the near future. The public comment period on the EIS/EIA will extend for 45 days from the date of publication in the FEDERAL REGISTER of the notice of its availability. The comment period on the criteria will be extended, if necessary, so that the two comment periods are concurrent and end on the same date. All written comments postmarked on or before the end of the public comment period will be considered. See "public participation" section.

ADDRESSES: The mailing address for all comments is Office of Solid Waste (WH-564), Environmental Protection Agency, 401 M Street SW., Washington, D.C. 20460: Attention: Mr. Shuster, Docket 4004. The official record of rulemaking (Docket No. 4004) is located in Room 2107, EPA, 401 M Street SW., Washington, D.C. 20460, and is available for viewing from 9 a.m. to 4 p.m., Monday through Friday, excluding holidays. All written comments received to date and all comments on the proposed criteria are filed in this docket.

PUBLIC HEARING LOCATION

The Executive Hotel (Terrace Room), 1055 First Avenue, San Diego, Calif. Registration: 7 to 7:30 p.m.

FOR FURTHER INFORMATION CONTACT:

Mr. Kenneth A. Shuster, Office of Solid Waste (WH-564), Environmental Protection Agency, 401 M Street SW., Washington, D.C. 20460; telephone 202-755-9116.

SUPPLEMENTARY INFORMATION:

Authority. These regulations (hereinafter referred to as the criteria) are being proposed pursuant to the authority of sections 1008(a)(3) and 404(a) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (Pub. L. 94-580, 90 Stat. 2303 and 2815, 42 U.S.C. 6907(a)(3) and 6944(a)), hereinafter referred to as the Act, and pursuant to the authority of section 405(d) of the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (Pub. L. 95-217).

Section 1008(a)(3) of Pub. L. 94-580 requires EPA to "provide minimum criteria to be used by the States to define those solid waste management practices which constitute the open dumping of solid wastes." Section 4004(a) of the Pub. L. 94-580 requires EPA to promulgate regulations containing minimum criteria for determining which solid waste disposal facilities pose "no reasonable probability of adverse effects on health or the environment from disposal of solid waste at such facility," and which facilities do not. Section 405(d) of Pub. L. 95-217 requires EPA to promulgate regulations for the disposal of sludge and the utilization of sludge for various purposes.

Implementation of these criteria are expected to encourage the recovery and utilization of solid waste by eliminating environmentally unacceptable disposal practices. This is in keeping with the Act, which urges the conservation and recovery of material and energy resources.

APPROACH

The purpose of the criteria is to provide minimum national standards for the protection of health and the environment from solid waste disposal facilities. The criteria provide minimum standards for the classification of disposal facilities.

EPA recognizes there are many factors which must be considered in determining if there will be an adverse impact and what the magnitude of the impact will be. Many of the factors vary from site to site, including climate, hydrology, geology, the amount and type of wastes, and ground and surface water proximity and usage.

One aim in developing these criteria was to be as specific as possible to facilitate the distinction or classification of disposal facilities, without reducing the flexibility of State solid waste management and enforcement agencies to take into account the site-by-site variations and make assessments based on local conditions. These criteria are not intended to prevent or restrict the authority or discretion of States to develop or utilize more stringent State or site-specific (situational) standards or criteria. States may choose to require more stringent location, design, construction, operation, maintenance, and performance standards where local conditions indicate.

Whenever possible the critieria utilize existing Federal, State, and local regulations or approaches in order to avoid duplication, inconsistencies, and unnecessary new regulations. For example, the wetlands and surface water criteria utilize the NPDES permit system established for point source discharge of pollutants under section 402 of the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500). Also, the ground water criterion utilizes the approach of the underground injection control program proposed under the Safe Drinking Water Act (Pub. L. 93-523).

COVERAGE

These criteria for the classification of disposal facilities apply to all "solid waste" and "disposal" facilities which are defined in the Act (section 1004) as follows:

The term 'solid waste' means any garbage, refuse, sludge from a waste treatment plant,

water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permit under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

The term 'disposal' means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constitutent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters.

The criteria as proposed do not apply to agricultural wastes, including manures and crop residues, returned to the soil as fertilizers or soil conditioners, or to mining and milling wastes intended for return to the mine. Congressional support for this exclusion is found in the House Report on the bill:

Agricultural wastes which are returned to the soil as fertilizers or soil conditioners are not considered discarded materials (solid waste) in the sense of this legislation. Similarly, overburden resulting from mining operations and intended for return to the mine site is not considered to be discarded material within the meaning of this legislation. (H.R. Rep. No. 94-1491, 94th Cong., 2d Sess. 2 (1976)).

Based on the definition of solid waste, the land application of domestic sewage and liquid effluent from the treatment of domestic sewage are excluded. However, these criteria do apply to the land disposal of sludge resulting from the treatment of domestic sewage.

In addition, these Criteria do not apply to irrigation return flows or discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

These Criteria also do not apply to the location and operation of septic tanks. However, the disposal of septic tank pumpings is subject to these Criteria.

When regulations for hazardous waste disposal facilities are promulgated under Subtitle C of the Act, facilities for the disposal of hazardous waste must comply with those regulations instead of these Criteria. Similarly, when regulations for the State Underground Injection Control Program (UICP; 40 CFR Part 146) are promulgated under authority of the Safe Drinking Water Act of 1974 (Pub. L. 93-523) they apply to underground well injection in lieu of these Criteria. However, the Criteria may be revised to incorporate sections of the UICP to reach problems in those States which do not have primary enforcement responsibility for the UICP.

The conventional use of the term "sanitary landfill" typically refers to the controlled burial of solid wastes, including municipal wastes (residential, commercial, and institutional wastes), sludges, ashes, industrial wastes, and/or construction or demolition wastes. Similarly, the term "open dump" conventionally refers to open, uncovered (often burning), and uncontrolled disposal sites for municipal and industrial wastes. These conventional definitions are more limited than intended by the definitions of the terms "sanitary landfill", "open dump", "solid waste", and "disposal" in the Act. Hence, these Criteria also apply to other types of wastes and to other solid waste management operations such as surface impoundments and waste utilization practices involving land application of solid waste as soil conditioners or fertilizers. To avoid any confusion which might otherwise result, these Criteria do not use the terms "sanitary landfill" and "open dump". The Criteria, however, provides the basis for the statutory definitions of these terms. Within the meaning of the Act, facilities which satifsy these Criteria are practices which "pose no reasonable probability of adverse effects on health or the environment" and facilities which do not satisfy these Criteria should be considered "open dumps" under those sections of the Act referring to this phrase.

Sludge Disposal and Utilization

Section 405(d) of the Federal Water Pollution Act, as amended by the Clean Water Act of 1977 (Pub. L. 95-217) requires EPA to develop regulations providing guidelines for the disposal and utilization of sludge. These Criteria are proposed to partially fulfill EPA's responsibility under Section 405(d), with respect to the land disposal and landspreading of sludge. Information on the costs of these uses of sludge is being developed and will be proposed in the future, as will guidelines on additional uses of sludge, which may include incineration, energy recovery, and give-away or sale of sludge or composted sludge. Owners and operators of publicly owned treatment works are required by Section 405(e) to use or dispose of sludge in accordance with guidelines promulgated under Section 405(d). With respect to land disposal and landspreading the owner or operator must assure compliance with these Criteria. The owner or operator must (1) analyze the sludge for cadmium and other toxic substances, (2) assure that the sludge has been appropriately stabilized, (3) determine the appropriate sludge application rates and assure that these rates are complied with, (4) determine what monitoring is required and assure that it is performed, and (5) develop any necessary contngency plans and assure they are complied with.

Adverse Effects

In establishing the need for these regulations, Congress identified a number of adverse effects on human health and safety and on the environment from improper disposal of solid wastes.

Section 1002(b) of the Act states:

"The Congress finds with respect to the environment and health, that—

"• • • (2) Disposal of solid waste and hazardous waste in or on the land without careful planning and management can present a danger to human health and the environment;

(3) As a result of the Clean Air Act, the Water Pollution Control Act, and other Federal and State laws respecting public health and the environment, greater amounts of solid waste (in the form of sludge and other pollution treatment residues) have been created. Similarly, inadequate and environmentally unsound practices for the disposal or use of solid waste have created greater amounts of air and water pollution and other problems for the environment and for health."

The House Report accompanying the Act states:

"Disposal of solid wastes, including hazardous wastes, can have adverse environmental impact in several ways. The following paragraphs discuss five different types of such impacts.

(i) Perhaps the most pernicious effect is the *contamination of ground water by leachate* from land disposal of waste • • •

(ii) Similar *pollution of surface waters* may occur • • •

(iii) Solid waste disposal can contribute to *air pollution* through open burning, incineration, evaporation, or sublimation, and wind erosion. One should add to this the problem of generation of obnoxious *odors* • • •

(iv) There have also been several cases of *acute poisoning* when hazardous materials were improperly disposed of • • •

(v) *Fires and explosions.*" (Emphasis added.) (H.R. Rep. No. 94-1491, 94th Cong., 2d Sess. 89 and 90 (1976)).

The House Report also states: "the adverse impacts • • • include fire hazards; air pollution (including reduced visibility); explosive gas migration; surface and ground water contamination; disease transfer (via vectors such as rats and flies); personal injury (to unauthorized scavangers); and, aesthetic blights" (H.R. Rep. No. 94-1491, 94th Cong., 2d Sess. 37 (1976)). A number of specific examples of each of these types of adverse effects follow this statement in the Report.

The House Report also states on page 37: "An open dump is defined as

a land disposal site where discarded materials are deposited with little or no regard for pollution or aesthetics, where the wastes are left uncovered, and where frequently the use of the site for waste disposal is neither authorized nor supervised. (Whereas), the effects on human health and the environment from real sanitary landfill should be slight."

These Criteria address these adverse effects in order to promote the proper disposal of solid waste, with no reasonable probability of adverse effects on health or the environment.

Implementation

Subtitle D of the Act specifies several actions related to these Criteria. Section 4005(b) requires EPA, within one year after promulgation of the Criteria, to publish an inventory of all facilities in the United States that do not comply with the Criteria. Thus, these Criteria will be used to determine which facilities will be included in the published inventory. Under Sections 4005(c) and 4003 of the Act, all facilities which do not meet these Criteria are prohibited. All new facilities must comply with the Criteria (Section 4003(2)). Any existing facility not in compliance must be closed or upgraded according to a State-established compliance schedule containing an enforceable sequence of actions leading to compliance within a reasonable time, not to exceed five (5) years from the date of publication of the inventory (Sections 4003(3) and 4005(c)). A facility may be placed on this State-established compliance schedule only where there is an EPA-approved State plan and where it has been demonstrated that no alternative which complies with the Criteria can be utilized. Thus, all noncomplying facilities are to be closed or upgraded as soon as practical, but in all cases within five years of publication of the inventory.

Implementation mechanisms for this prohibition include the regulatory powers established to implement the State plan (Section 4003), the citizen suit provisions of Section 7002, and the imminent hazard provisions of Section 7003. There are no statutory requirements for States to implement or enforce the open dumping prohibition, but States are not eligible for Federal financial assistance under Subtitle D of the Act if the State plan fails to provide for such implementation and enforcement. A State may, of course, adopt and implement the Criteria on its own initiative, without EPA approval of a State plan.

The inventory of open dumps is the key to implementation of the Criteria. The inventory will be conducted by evaluating solid waste disposal facilities against the Criteria and publishing a list of those facilities which do not comply with the Criteria. Since the inventory process is the precursor to State planning and enforcement action, the Agency believes that State involvement should be maximized and State priorities emphasized. Therefore, it is the Agency's intent that the inventory evaluations be conducted by the States, with funding provided by EPA.

The Agency recognizes the practical difficulties inherent in applying the Criteria to all existing and new disposal facilities. Determinations as to whether facilities pose no reasonable probability of adverse effects on health or the environment (i.e. whether facilities comply with the Criteria) will require a number of extensive technical and scientific decisions. This is especially true in determining the potential for ground-water pollution. Furthermore, since facilities found in violation of the Criteria are prohibited by Federal law, due process considerations and adequate documentation of evidence are important.

Thus, it is the Agency's intent to provide, in a logical and progressive manner, for the necessary time-phasing of the implementation of the inventory process. This will be managed through the State planning and plan implementation provisions of the Act. Specific criteria and procedures for States to use in establishing priorities for implementation of the Criteria will be provided in the Agency's Guidelines for State Plans (Section 4002). Priorities for the inventory process and enforcement of the open dumping prohibition will be established on a State-by-State basis in accordance with the procedures established in these Guidelines.

In the "Guidance for the Development of State Work Programs for FY-78 under the Resources Conservation and Recovery Act (RCRA)" sent to the States by EPA on July 29, 1977, the following inventory priorities were recommended: (1) Residential, commercial, and institutional wastes, (2) municipal wastewater treatment sludge, (3) industrial wastes and pollution control residues and sludges, (4) agricultural wastes, and (5) mining wastes.

Integration With Regulations for Hazardous Waste Disposal Facilities

Regulations for hazardous waste disposal facilities are being developed by EPA under Section 3004 of the Act. EPA feels that the environmental effects of all land disposal facilities should be equivalent. That is, equal protection of human health and the environment should be provided regardless of waste type or disposal facility type. Operational and monitoring requirements, of course, may differ depending on such factors as the potential hazard of the waste and availability and reliability of control technology.

Therefore, the development of the hazardous waste disposal regulations is being coordinated with these Criteria so that the two regulations will accomplish consistent environmental results. Operational and monitoring requirements for hazardous waste disposal facilities, however, are likely to be more stringent.

Note.—Comments are solicited: (1) on the concept of consistency of environmental effects, and (2) on whether the level of environmental protection addressed by the Criteria is adequate.

Integration With Surface Impoundment Studies Under the Safe Drinking Water Act

Section 1006(b) of the Solid Waste Disposal Act as amended requires the Administrator to integrate the provisions and enforcement of the Solid Waste Disposal Act with other Acts under the Administrator's authority, including the Safe Drinking Water Act (SDWA) (Pub. L. 93-523), to the maximum extent practicable in order to avoid needless duplication of regulations and expenditures. There is a potential overlap between the Solid Waste Disposal Act and the SDWA with regard to surface impoundments such as pits, ponds, and lagoons.

Section 1442(a)(8)(C) of the SDWA requires a study of the nature and extent of the impact on underground water of ponds, pools, lagoons, pits, or other surface disposal of contaminants in underground water recharge areas. In partial fulfillment of this requirement, EPA intends to conduct, through grants to State agencies, an assessment of surface impoundments and their effects on ground water.

The criteria proposed by this action under the Solid-Waste Disposal Act apply to all solid waste disposal facilities, including surface impoundments. Thus, the inventory of open dumps required by section 4005(b) of the Solid Waste Disposal Act would include those surface impoundments which do not comply with the criteria. EPA intends to develop the inventory through grants to State agencies.

Thus, there is the potential for confusion and duplication of effort between the studies of surface impoundments to be conducted under the SDWA and the inventory to be conducted under the Solid Waste Disposal Act. Therefore, the Agency is closely coordinating these two efforts. The State grant programs under the two Acts may be consolidated for this purpose, subject to legal and administrative constraints, but must be coordinated. To this end, the studies and assessments planned under the SDWA will be used as the basis for identifying those surface impoundments that have the greatest potential for adverse effects and thereby will help the States in developing the inventory re-

quired under the Solid Waste Disposal Act. Those impoundments which are identified as having the greatest potential for serious impact on ground water quality would be considered high priority for development of the Solid Waste Disposal Act inventory. Such impoundments which are found to violate the criteria proposed by this action would be placed on the inventory and be liable for closure or upgrading in accordance with the State planning and plan implementation provisions of the Solid Waste Disposal Act (sections 4003 and 4005) and the Federal prohibition of open dumping (section 4005).

However, the Agency has not yet determined the best regulatory approach to the control of surface impoundments. Except, of course, those surface impoundments that receive hazardous wastes are subject to the regulations for hazardous waste disposal facilities promulgated under Subtitle C of the Act. While the inventory process and Subtitle C regulations will begin to bring such facilities under State control under the Solid Waste Disposal Act, EPA will continue to explore and reevaluate its authorities under the Solid Waste Disposal Act, SDWA, the Federal Water Pollution Control Act, and the Toxic Substances Control Act of 1976 (Pub. L. 94-469, 90 Stat. 2003, 15 U.S.C. 2601) in order to determine the best regulatory approach under any or a combination of these various authorities. If these authorities are not sufficient to assure the adequate control of the disposal of wates through surface impoundments, EPA will seek additional legislative authority which will assure a solution to this serious problem. States and the general public will be allowed ample opportunity to comment on the most effective means of regulating surface impoundments such as pits, ponds, and lagoons.

Determining Compliance

Compliance with the criteria should be achieved through (1) application of the best practicable controls (technologies and practices), in conjunction with (2) environmental monitoring to determine if adverse effects do occur and if corrective action is necessary. This approach should provide for a reasonable probability of preventing adverse effects on health or the environment.

Some of the criteria establish environmental standards and others specify technologies or practices which are based on their potential for preventing adverse environmental effect. However, all the criteria specify that the facility be "so located, designed, constructed, operated, and maintained" in order to emphasize the use of best practicable controls and to allow a determination of compliance based on site-specific evaluations of these control technologies and practices. Environmental monitoring is encouraged by EPA, because it represents a direct measure of any adverse effect. However, such monitoring programs may be very expensive, in many cases may not be necessary, and may place too much reliance on corrective rather than preventive methods. Therefore, the State may determine it is not necessary to monitor if the facility is such that no adverse effect is expected because of low volume or inert or innocuous wastes, or because the control technology and practice are considered to be reasonably able to achieve the environmental standards. On the other hand, monitoring alone does not eliminate the need for application of the best practicable controls.

Discussion of Proposed Criteria

Definitions

All definitions contained in the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 apply in these Criteria. The most pertinent of these definitions are: "disposal," "sludge," "solid waste," "open dump," "sanitary landfill," and "State." The definition for "hazardous waste" given at section 1004(5) of the Act will be further defined (and revised when appropriate) under section 3001(a), and a listing of hazardous wastes will be promulgated (and revised when appropriate) under section 3001(b) of the Act.

The following definitions were taken verbatim from section 502 of the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500): "Contiguous zone," "navigable waters," and "point source." "Discharge of pollutants" was expanded from the definition in Pub. L. 92-500 to include nonpoint sources.

The definition of "wetlands" was taken from the Army Corps of Engineers "Permits for Discharges of Dredged or Fill Material into Waters of the United States" (33 CFR 323.2(c)). This definition is essentially the same as that contained in Executive Order 11990 (42 FR 26961, May 24, 1977), which states: "Wetlands means those areas that are inundated by surface or ground water with a frequency sufficient to support and (which) under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, wet meadows, river overflows, mud flats, and natural ponds."

The definition of "endangered" is based on the usage of this term in "Proposed Regulations, State Underground Injection Control Programs" (41 FR 36726, August 31, 1976) developed under authority of the Safe Drinking Water Act of 1974.

Environmentally Sensitive Areas

Section 257.3-1 concerns the location of disposal facilities in environmentally sensitive areas. Environmentally sensitive areas in the Criteria are wetlands, floodplains, permafrost areas, critical habitats of endangered species, and recharge zones of sole source aquifers. These areas were selected for coverage in this criterion because EPA feels these areas are natural assets (have beneficial qualities) which are not adequately protected by the other six criteria (§§ 257.3-2 through 257.3-7). Before any new site may be located or any existing disposal site may be expanded in an environmentally sensitive area, the facility must clearly meet the criteria contained in paragraphs (a) through (e) of § 257.3-1. In general, disposal sites should not be located in environmentally sensitive areas when feasible alternatives exist, unless it can be clearly demonstrated that there will be no significant adverse impact on the ecosystem or human health from the operation of the facility in such an area. In determining whether other feasible alternatives exist, the availability and practicality of alternative disposal sites (both existing and potential) should be assessed in terms of hydrogeologic, technological, environmental, economic, and other pertinent factors. In order to ensure that no significant adverse impact on the ecosystem exists, the types and extent of potential adverse impacts must be identified. The facility must be designed, constructed, operated, completed, and maintained for as long as necessary to minimize, prevent, or correct such impacts. Even if a facility by itself may have a minimal impact, consideration should be given to a general appraisal of the specific environmentally sensitive area in terms of rate of encroachment, cumulative impact, and multiplier effect of other activities.

The State agency or agencies (as designated in accordance with section 4006(b) of the Act) should review such determinations with respect to the completeness and accuracy of information, whether other alternatives exist, whether the engineering design and plans are adequate, and whether the assessment of alternatives versus potential environmental impacts provides sufficient justification for location of the facility in the environmentally sensitive area.

Wetlands. The Nation's coastal and inland wetlands are vital natural resources of great hydrological and ecological importance. Wetlands provide natural flood control, recharge of aquifers, natural purification of waters, and flow stabilization of

streams and rivers. Wetlands produce large quantities of nutrients which support complex ecosystems extending into estuaries and streams, etc., well beyond the marshes and wetland areas. Wetland habitats support fish, shellfish, mammals, waterfowl, and other wildlife fauna and flora. Wetlands are used in the production of many agricultural products and timber and for recreational and scientific pursuits.

In the past, solid waste disposal sites have frequently been located in wetland areas, generally because there has been less public resistance to locating them there, the land is cheaper, and when completed the land is often sold or used for a direct economic purpose. The alternation and destruction of the wetland resources through draining, dredging, landfilling and other means has had an adverse cumulative impact on wetlands and other aquatic resources. Recent estimates indicate over 40 percent of the 120 million acres of wetlands in the United States that existed 200 years ago have been irrevocably destroyed.

The intent of the § 257.3-1 (a) criterion is to prevent the destruction of wetlands. New disposal sites may not be placed in wetlands and existing operations may not be continued in wetlands unless an NPDES permit has been obtained (under section 402 of the Federal Water Pollution Control Act (FWPCA) Amendments of 1972 (Pub. L. 92-500, 86 Stat. 880, 33 U.S.C. 1342), and if a levee, dike, or other type of containment structure is to be placed in the water as part of the disposal activity, an Army Corps of Engineers permit has been obtained (under section 404 of the FWPCA) according to 33 CFR Parts 320-329. There is a strong presumption against the issuance of an NPDES permit for the discharge of solid waste into wetland areas. Only upon a showing of extraordinary circumstances—including a demonstration of alternative methods of disposal, an assessment of environmental impact for each alternative, an assessment of the technical and economic feasibility of each alternative, and a justification for the wetlands disposal alternative in view of the environmental impact and feasibility—will an NPDES application be considered and an NPDES permit issued. Any NPDES permit issued for the discharge of solid waste into wetland areas must assure that the facility utilizes appropriate technologies and/or best management practices to minimize any adverse effects.

This approach conforms with the intent of Executive Order 11990 dated May 24, 1977, concerning Protection of Wetlands.

Floodplains. Disposal of solid waste in floodplains may have several significant adverse impacts: (1) If not adequately protected from flooding, wastes in a disposal site may be inundated by water and flow from the site, affecting downstream waters; (2) since floodplains generally have direct hydraulic connection to wetlands, surface water, and ground water, location of disposal sites in floodplains may result in leachate contamination of ground water; (3) filling in the floodplain may restrict the flow of flood waters, causing greater flooding upstream; and (4) filling in the floodplain may reduce the size and effectiveness of the flood-flow retaining capacity of the floodplain which may cause a more rapid movement of flood waters downstream, resulting in higher flood levels and greater flood damages downstream.

For purposes of these Criteria the floodplain is defined by the 100-year flood level. This level is considered adequate to minimize the chances for site inundation and increased flood levels and damages. This level is considered conservative in many parts of the country because construction activities (buildings, roads, storm sewers, etc.) continue to increase runoff, thereby increasing flood levels for similar precipitation incidents. The 100-year floodplain has been mapped for many areas of the Country by the U.S. Geological Survey, Army Corps of Engineers, and Department of Housing and Urban Development. The 100-year floodplain is determined by the techniques described in "A Uniform Technique for Determining Flood Flow Frequencies," Bulletin No. 15, Water Resources Council, Hydrology Committee, December 1967. For unmapped areas, the Water Resources Council is developing procedures for determining flood levels, according to Executive Order 11988, dated May 24, 1977.

The intent of this criterion is: (1) To require an assessment of any new disposal site or expansion of any existing site in a floodplain to determine the potential impact or the disposal site on downstream and upstream waters and land, (2) to prohibit such disposal activities if the site as designed may cause increased flooding during the base flood, and (3) if the disposal site is located in a floodplain, to require the use of available technologies and methods to protect against inundation by the base flood and minimize potential for adverse effects on water quality and on the flood-flow capacity of the floodplains.

In general, it is available not to locate solid waste disposal facilities in the 100 year floodplain. Therefore, EPA encourages the search for and siting of disposal facilities out of the 100 year floodplain. However, landspreading of wastes in the floodplain as fertilizers or soil conditioners for agricultural or vegetative purposes may be beneficial and should not pose a significant adverse impact on flood levels or water quality if the other criteria are met, and, therefore, is exempt from the floodplain provision. Other disposal facilities in floodplains should be designed and operated to protect against inundation by the 100 year flood, minimize the acreage of the floodplain consumed by the site, and limit the wastes to nonhazardous, more inert types.

As with the destruction of wetlands, EPA feels that although the environmental impact of an individual site may be considered minimal, the cumulative effect of the continued encroachment on the destruction of these areas warrants a careful evaluation of total impacts of human activities and the discouragement of site location in these areas unless other suitable sites cannot be found.

This approach conforms with the intent of Executive Order 11988 dated May 24, 1977, concerning Floodplain Management. Federal Agencies are required to comply with this Executive Order and State agencies are encouraged to develop and apply similar policies and to consider the provisions of the Unified National Program for Floodplain Management of the Water Resources Council.

Permafrost areas. Permafrost is permanently frozen subsoil, occurring where the freezing depth each winter exceeds the summer thaw depth. Water in permafrost areas occurs seasonally at or near the ground surface, above the permanently frozen subsoil in the active zone. In portions of arctic Alaska the depth of thaw or active zone is less than eighteen inches.

Disposal of solid waste in permafrost areas presents three environmental problems. First, any disturbance of the delicate insulating plant and moss cover increases the depth of annual thaw. Since permafrost commonly consists of supersaturated soils and ice, an increased depth of thaw can alter the surface contour, create lakes, and cause significant erosion. Moreover, any activity to correct the erosion or to control surface and subsurface waters tends to increase the thaw and erosion problem. Second, since the active zone is commonly the only source of drinking water, solid waste disposal in the active zone may cause difficult water pollution problems. All seasonal water movement occurs in this active zone and leachate contamination is very likely. Third, waste deposited in permafrost areas is generally deposited on the surface and undergoes very little change over time so that it accumulates and remains exposed to future generations.

Current recommended practices being implemented where feasible in Alaska's arctic are as follows:

(a) Recyclable materials, such as scrap metal, batteries, tires, etc., are

salvaged and transported south for recycling or other approved uses.

(b) Combustible and putrescible wastes including sewage sludge are incinerated.

(c) Deep well injection of incinerator residue and other wastes is practiced where drilling equipment is available.

(d) Wastes are hauled to a more temperate region for environmentally sound processing and disposal.

(e) Landfilling is limited to inert incinerator residue and a few other nonrecoverable, inert items.

(f) Landfills are allowed only in selected areas where the soils are relatively dry and workable, and little or no vegetative cover exists. Only regional landfills are allowed (i.e., only the minimum number adequate to serve a region).

The assessment of alternatives and potential impacts required in this criterion is to include all the above practices.

Critical habitats. Under Section 7 of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1536), all Federal departments and agencies, in consultation with the Department of Interior, are to utilize their authorities in furtherance of the purposes of the ESA, including the protection from destruction or modification of such habitats as the Secretary of Interior has determined to be critical to the continued existence of endangered species listed under Section 4. Any specific geographical area identified as critical habitat in 50 CFR Part 17, Subpart F may not be used for the disposal of solid waste unless it is demonstrated that the facility design, construction, operation, and maintenance will not jeopardize the continued existence of endangered species, and approval is obtained from the Office of Endangered Species, Fish and Wildlife Service, Department of Interior. Where other feasible alternatives exist (including technological and economic considerations), such critical habitat areas should not be used for solid waste disposal.

Recharge zones of sole source aquifers. Aquifers are water-bearing geologic formations which often yield significant quantities of water to wells or springs; a large percentage of the population in this country obtains its drinking water supply from these sources. Aquifers are replenished through recharge zones which are permeable to rainfall and surface runoff and through which the aquifer is susceptible to contamination. Section 1424(e) of the Safe Drinking Water Act of 1974 (Pub. L. 93-523) makes it possible for EPA to designate areas which are solely or principally dependent on an aquifer for drinking water supply. Disposal sites should not be located in the recharge zones of sole source aquifers when feasible alternatives (including technological and economic considerations) exist. However, when waste disposal facilities are located in the recharge zones of aquifers serving these designated areas they must be located (taking advantage of topography, depth to ground water, and natural soils), designed, constructed (generally including artificial liner(s)), operated, maintained, and monitored to prevent endangerment of the water source.

Other areas. The criteria on environmentally sensitive areas have been limited to wetlands, floodplains, permafrost areas, endangered species habitats, and recharge zones of sole source acquifers. Additional areas considered by EPA included active fault zones and karst terrain.

Surficial disturbances by active faults may result in shifts in waste disposal sites which may damage any liners used or expose wastes. Certainly, hazardous wastes should not be disposed in sites located over truly active fault zones. This issue will be addressed in the regulations being developed for hazardous wastes under Subtitle C of the Act. Active fault zones with a history of surficial disturbances are very few and well known in the United States. EPA had not proposed to specifically address this problem in these Criteria because those few States with such unique areas already have adequate controls.

Karst terrain is terrain which has been formed over limestone, dolomite, or gypsum as a result of solution processes; it is characterized by closed depressions or sink holes, caves, and solution channels, and commonly has underground drainage. Disposal of solid wastes on such a terrain faces problems distinctive to this unique geological setting: (1) Leachate produced at the site may be channeled without attentuation via solution cavities beneath the site into ground water and transported rapidly over substantial distances to unpredictable locations via turbulent groundwater flow through solution channels in the bedrock, and (2) a cavern or sink hole beneath the site can, in effect, ingest the entire disposal site into the ground water channels within the bedrock.

Because the characteristics and potential impact of karst terrain are so variable and complex, and because the ground-water criterion addresses the major concerns of disposal in karst terrain, EPA decided not to include karst terrain in the "Environmentally Sensitive Areas" criteria. However, care should be taken in evaluating risks on a site-by-site basis before solid wastes are disposed of on karst terrain. Surface geophysical techniques such as seismic and electrical resistivity surveys, when corroborates by well log data, are valuable in assessing subsurface conditions by indicating the abundance and sizes of air and waterfilled solution cavities in the underlying bedrock.

NOTE.—Comments are particularly solicited on the inclusion or exclusion of wetlands, floodplains, permafrost areas, endangered species habitats, sole source aquifers, active fault zones, and karst terrain as environmentally sensitive areas.

SURFACE WATER

This criterion seeks to help achieve the objective of the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500) of restoring and maintaining the integrity of the surface waters of the United States. Accordingly, all point source discharges of pollutants, including surface runoff, surface leachate, or leachate treatment effluent, must comply with an NPDES permit issued for the facility according to Section 402 of Pub. L. 92-500.

The criterion also requires, where possible, the prevention of direct discharges into surface waters of nonpoint sources of pollutants (unchannelled leachate seepage and surface runoff which may contain leachate, waste materials, or erosion sediment). Non-point source discharges should be prevented or minimized through facility design, operation, and maintenance, (e.g. by artificial or natural barriers, liners, or dikes), and by collection of such waters if produced (e.g. by ditch or trench). When collected, such waters become a point source which requires an NPDES permit if discharged to off-site surface waters. Flow of surface runoff from adjacent and surrounding lands should be channelled away from the disposal site to avoid contamination.

GROUND WATER

Ground water is often a high quality, low cost, readily available source of drinking water.[1] At least one half of the population of the United States depends upon ground water as a source of drinking water. Approximately ninety-seven percent of the Nation's water resource (excluding the oceans) is ground water. In many regions, ground water is the only economic and high quality water source available. In others, ground water can be developed at a fraction of the cost of surface water. Ground water in aquifers across the Nation is generally suitable for human consumption with little or no treatment necessary. Some large cities rely exclusively on ground water for drinking water.

[1] See "Waste Disposal Practices and their Effects on Ground Water, The Report to Congress," Office of Water Supply and Office of Solid Waste Management Programs, EPA, January 1977, for a further discussion of ground-water resources and contamination sources and problems.

Ground water has been contaminated by solid waste disposal facilities on a local basis in many parts of the Nation and on a regional basis in some heavily populated and industrialized areas, precluding its use as drinking water. Serious local economic problems have occurred because of the loss of ground-water supplies. The degree of contamination ranges from a slight degradation of natural quality to the presence of toxic concentrations of substances. Effective monitoring of potential sources of ground-water contamination is almost nonexistent, and many known instances of contamination have been discovered only after ground-water users have been affected.

Ground water usually moves very slowly; therefore, it often takes years or decades for contaminants to reach water users. It also takes decades or even centuries for a ground-water resource to purge itself even after a contamination source has been removed. The mechanisms of soil attenuation (sorption, ion exchange, precipitation, dispersion, or decay) have a limited capacity and are also reversible. Because of this, soil attenuation alone may be insufficient to assure prevention of ground-water contamination from a waste disposal facility.

When contamination does occur, legal action is seldom taken against the source of contamination because adequate monitoring generally does not exist, it is often very difficult and costly to prove the source of contamination, and the contamination may have occurred in the past, with no one remaining to take responsibility.

Since removing the source of contamination still does not clean up the aquifer once contaminated, the contamination of an aquifer can rule out its usefulness as a drinking water source for decades and possibly centuries. Also, cleanup of contaminated ground water may not be economically or technically feasible. Thus, the most effective means for protecting ground water is to control and monitor the potential source of contamination, rather than the aquifer or point of water use.

Proper site location (including avoidance of aquifer recharge zones), ground-water and land use planning, and proper design, construction, operation and maintenance of facilities are the principal techniques available for minimizing potential ground-water contamination problems. Where economics or other factors dictate that sites be located in areas of critical ground-water use (such as existing or potential drinking water sources), such technology as physical containment (liners), collection, and treatment of leachate may be necessary.

The ground-water criterion seeks to protect current users of the ground water and to protect other designated ground water for future use. Of primary concern is protection of current and future ground-water drinking water supplies.

The criterion uses the "endangerment" approach proposed for the Underground Injection Control Program (41 FR 36726) which prohibits contamination that would require additional treatment of current or future drinking water supplies or otherwise makes the water unfit for human consumption.

The ground-water criterion provides for application of "endangerment" at the property boundary of the disposal site. However, prevention of contamination of ground water within or under the site is often the only means to effectively achieve this goal at the property boundary. Monitoring ground water quality at the "waste boundary" (or within or under the site) may be desirable in order to anticipate potential "endangerment" at the property boundary and to measure effectiveness of control technology. Monitoring only at the property boundary may not provide ample opportunity for appropriate corrective actions because of time, economic, and technical constraints. Extending the property boundary would only postpone and aggravate the problem and would evade the intent of this criterion.

Some reviewers of early drafts of the Criteria have suggested that, in addition to or in lieu of the property boundary as point of application of "endangerment", a specific distance be designated. The specific distance (e.g. one kilometer) could be measured from the edge of the point of waste deposition or from the property boundary of the disposal facility. For example, "endangerment" would be determined on the basis of the site's property boundary or a point one kilometer from the edge of the waste deposit, whichever is closest to the solid waste.

NOTE.—While this approach is not proposed in the Criteria, comments on it are specifically solicited. Comments in support of this approach should indicate the distance which would be specified in the Criteria and explain the rationale for selection of that distance.

Under the ground-water criterion it is necessary to assess the impact of disposal facilities relative to the current and planned future utilization of the ground water. Utilization is divided into two categories: Case I addresses ground water currently used or designated for use as drinking water supplies or undesignated water containing 10,000 mg/l total dissolved solids or less; and Case II addresses ground water designated for other uses. Thus, the criterion seeks to recognize and encourage definitive water planning decisions at the State and local levels.

In the case of ground water currently used or designated (planned) for use as a drinking water supply, the quality of the ground water beyond the disposal facility is to be maintained for that use. That is, the disposal facility is not to "endanger" the ground water beyond the property boundary.

In certain situations, conscientious resource management and societal needs may dictate that ground water be maintained at a quality either higher or lower than that provided by the "endangerment" concept which is based on the water quality needed when the water is used for drinking purposes. Such resource management decisions are appropriate at the State and local planning levels and should include participation of the public (e.g. public notice and hearings), involving the users of both the ground water and the facilities which may affect ground-water quality. Thus, if after specific determinations States designate ground water for uses other than drinking water, they should establish the quality at which the ground water is to be maintained consistent with the designated use. Consideration must be given to the finality of the designation and the potential impact on other water resources. The impact of a disposal facility would then be assessed against that quality specified by the State.

In order to predict, as early as possible, the potential for ground-water endangerment or the impact on ground-water quality, the disposal facility should be monitored so as to indicate the movement of contaminants from the disposal facility into the ground water. Contingency plans should be formulated for corrective actions to be taken in the event that an adverse impact is indicated by the monitoring.

AIR

Open burning is the uncontrolled or unconfined combustion of solid wastes. Uncontrolled means (1) the air or oxygen to fuel ratio (which determines the temperature and efficiency of combustion) is not governed, (2) the combustion residence time and mixing is not governed, or (3) the emissions of pollutants into the air are unchecked. Emissions of pollutants into the air from open burning are high compared to controlled burning such as municipal incinerators with air pollution control equipment (Table 1).

TABLE 1.—*Average emissions of air pollutants*[1]

(In pounds per ton)

Air pollutants	Open burning	Municipal incinerator	
		Wet scrubber	ESP[2] Unit
Particulate[3]	16	3.7	2.1
Carbon monoxide	85	35.0	35.0

TABLE 1.—*Average emissions of air pollutants*[1]—Continued

[In pounds per ton]

Air pollutants	Open burning	Municipal incinerator	
		Wet scrubber	ESP[2] Unit
Hydrocarbons[4]	30	1.5	1.5
Nitrogen oxides	6	3.0	3.0
Sulfur oxides	1	2.5	2.5

[1] SOURCE.—"Compilation of Air Pollutant Emission Factors," EPA, Report No. AP-42, 2d edition.

[2] Electrostatic precipitator.

[3] The EPA new source performance standard (40 CFR pt. 60) for particulate emissions from new incinerator facilities corresponds to 1.5 lbs/ton of waste.

[4] Expressed as methane (CH_4).

The impact of open burning is particularly acute in the major metropolitan areas and air basins. Open burning of wastes is generally prohibited in such areas unless a variance is obtained from the State and local air pollution control agency or board. However, establishing variances based on potential impacts is very complex because of the dynamic nature of the many variables involved (existing air quality, wind speed, humidity, mixing lid and vertical dispersion, efficiency of the burn, terrain, amount and type of wastes, etc.). Because of this, adequate variance procedures are often difficult to administer and enforce.

In addition to the potential health and property damages from air pollution, significant safety and damage threats caused by smoke and fire are associated with open burning. Smoke from open burning of wastes can reduce air and auto traffic visibility, and has resulted in incidents of multiple car accidents and deaths on expressways. Unconfined fires at dumps may spread and result in damage to property.

Because of these concerns, the criterion for air contains a prohibition of open burning for residential, commercial, institutional, and industrial wastes. Open burning of other waste types is also prohibited, except that, in special situations, States may give variances to this prohibition in accordance with State or local variance procedures. Such variances are to be conditioned upon specific climatological and meterological situations (e.g. air flow conditions and air quality), topographical and land use situations (e.g. in a valley, on a hillside, next to a hospital), and assessments of waste types and amounts, and are to provide for confinement to prevent the spread of fires. Such variances are not to be given in situations where smoke may interfere with the visibility of air or road traffic (i.e., near airports or expressways). An example of a waste type and situation when such a burning variance may be issued would be field and brush burning for agricultural purposes, under specific atmospheric conditions.

The air criterion also calls for the control of harmful waste emissions by evaporation and sublimation so as to protect public health and welfare.

NOTE.—Comments are requested on the advisability of also including specific emission or air quality limits based on a modification or extrapolation of OSHA air quality standards.

APPLICATION TO LAND USED FOR THE PRODUCTION OF FOOD CHAIN CROPS

Practices which result in the conservation, recovery, or utilization of waste materials in environmentally safe ways are strongly encouraged by EPA. The application of solid waste to the surface of the land may provide a significant benefit through the addition of organic matter, nitrogen, phosphorus and certain other essential trace elements to the soil. Specifically, the use of solid waste by land application coupled with good management techniques for enhancement of parks and forests and reclamation of poor or damaged terrain should be considered for the utilization of solid waste. Application of solid waste to agricultural lands may also be regarded as an environmentally acceptable method of disposal. However, when improperly managed, such practices can create a potential threat to the future productivity of the land and to the human food chain through the entry of toxic elements, compounds, and pathogens into the diet. Therefore, special criteria have been established for facilities that produce food chain crops. These Criteria require the implementation of good system design and operation in order to restrict practices that pose a substantial risk to public health or the environment. Only those facilities which are involved in the production of food chain crops must meet these special criteria as well as all other criteria in this regulation. Food chain crops are defined as tobacco; crops grown for human consumption; and pasture, forage, and feed grain for animals whose products are consumed by humans. (Facilities used for the disposal of solid waste on land which is not involved in the production of food chain crops are not subject to these special criteria. However, they must meet all other criteria in this regulation.)

At this time the criteria only address cadmium, pathogens, pesticides, persistent organics, and direct ingestion of waste. The criteria will be revised in the future to address other metals, organics, and compounds as more information becomes available on the human health implications of their application to land (e.g., PCBs, and other persistent organics). Future revisions of the criteria will also address substances which could adversely affect the productivity of agricultural land. Potentially phytotoxic metals such as zinc, copper, and nickel will be considered for inclusion. In the interim, additional guidance on maximum application rates and application of solid wastes to nonfood chain lands can be obtained from State and Federal agricultural departments, as well as from EPA's technical bulletin entitled "Municipal Sludge Management: Environmental Factors" (EPA 430/9-77-C04).

The application of solid waste to land used for the production of food chain crops can, under certain conditions (e.g., solid waste with high levels of cadmium applied on low pH soils), results in significantly increased cadmium levels in certain crops. Further, cadmium is a cumulative toxicant so that the risks from continued ingestion at elevated levels increase over time. Because of these concerns, it is the intent of EPA to move toward minimizing cadmium additions to crop land by controlling waste disposal practices.

EPA, the Food and Drug Administration, and the U.S. Department of Agriculture as well as many other groups are concerned over the conduct of any practice which could significantly increase the cadmium level in food crops beyond current levels. This concern arises from an FDA assessment of teenage males in this country (class of individuals which consumes the most food), which concluded that their average daily intake of cadmium food and water approximates the total tolerable daily intake level recommended by the World Health Organization. FDA has stated that: "While there is no evidence that the present cadmium level in the U.S. diet poses a health hazard now, prudence dictates that new developments should not be established on a large scale that could cause a significant and possibly irreversible increase of cadmium in the food supply."

Based on these concerns, it is the intent of these criteria to minimize the movement of cadmium from solid waste applied to the land into the food chain. Two approaches are included for the management of cadmium. The first approach includes four site management controls which will minimize the uptake of cadmium. Under this approach, crop cadmium monitoring is not necessary. The second approach is specifically designed for facilities which are closely managed and monitored. It allows for the comparison of crops or meats produced from solid waste amended soils with similar crops or meats produced locally where solid waste has not been applied. This approach provides flexibility to those facilities which possess the necessary resources and expertise to intensively manage and monitor their operations.

The first approach (§ 357.3-5(a)(1)) includes four site management controls. Under this approach, annual and cumulative cadmium addition criteria are specified. A phased reduction of annual cadmium additions is proposed. This provides a limitation to be imposed immediately that will provide initial protection to the human diet. Over time, this proposed limitation would become more stringent, thereby providing greater degrees of protection. Phasing also gives communities and industry the time necessary to implement programs, such as source control and pretreatment of industrial discharges, to reduce further the cadmium concentrations in their wastes.

NOTE.—Comments are requested on the public health and environmental implications of this phased approach. Comments are also requested on the ability of locally implemented industrial waste pretreatment programs to reduce solid waste cadmium concentrations to levels which will permit continued land application on food chains crops within the schedule shown.

The maximum cumulative cadmium addition is based on soil cation exchange capacity (CEC) even though it is recognized that soil CEC is not the only factor to consider in setting levels of cumulative cadmium additions to soil. Other soil factors such as organic matter and hydrous oxide contents may be equally or more important in limiting metal availability. However, the cation exchange capacity of the soil was selected since it provides a measurable index of the soil's ability to limit cadmium availability to plants.

Data indicate that nearly all food crops may accumulate cadmium when grown on waste-amended soil with elevated cadmium levels. However, leafy vegetables, root crops, and tobacco generally accumulate cadmium to a greater degree than do grains. Therefore, in order to protect the food chain, this alternative places further restrictions on the cadmium concentration in solid wastes which are applied to land use for the production of leafy vegetables, root crops, and tobacco.

In order to minimize the movement of cadmium into plants as well as ground water, this alternative requires that the pH of the solid waste and soil mixture be controlled. While not included in the criteria, it is recommended that the ratio of cadmium to zinc in the solid waste be less than or equal to 0.015 (especially for high cadmium content solid wastes) where solid waste is applied to naturally acidic soils.

The second approach § 257.3-5(a)(2) recognizes the fact that a wide variety of site specific conditions and management variables can affect the level of cadmium entering crops. Rather than relying on operational criteria this approach establishes a minimum level of performance based on a comparison with the cadmium levels of the same crop species or meats produced locally where solid waste has not been applied.

The application of solid waste to land used for the production of crops which are directly consumed by man rather than by animals, must have cadmium concentrations which are comparable to similar crops raised locally. Adequate protection should be provided by comparing the cadmium concentrations in meats which are marketed (especially those portions of the animal which are known to accumulate cadmium such as the kidney and liver) rather than pasture grasses, forage, or other crops raised for animal consumption. This approach also requires that a contingency plan be developed which identifies alternative courses of action if the levels of cadmium in the crop are not found to be comparable with other local crops. The plan, at a minimum, should address restrictions on crop marketing future land use and sludge application rates.

NOTE.—Comments are requested on how to define comparability. Specifically, what analysis, if any, should be performed on the local crop or meat cadmium level monitoring data in order to establish the maximum allowable crop or meat cadmium levels permissible at a land application facility?

While the critieria in this section apply to all solid wastes, certain of them specifically address wastes of concern due to their pathogen content. Such wastes include hospital waste, municipal wastewater treatment sludge, and other wastes which may be of particular concern due to their pathogen content. The criteria require stabilization if such wastes are applied directly to the land's surface. In addition, crops normally eaten raw may not be grown for at least 1 year following the application of such wastes. A longer delay may be necessary if there are positive indications of viable Ascaris ova.

Since many solid wastes contain pesticides and persistent organics, in addton to heavy metals, the criteria require that any food and animal feeds grown on solid waste amended soils meet all applicable food quality regulations.

The direct ingestion of certain solid wastes (e.g., municipal wastewater treatment sludge) may be of concern especially if they contain pathogens, toxic organics, or heavy metals (especially cadmium, lead, and PCBs). Therefore, these wastes must be managed to avoid direct consumption of freshly applied solid waste by animals raised for milk or by humans.

DISEASE VECTORS

The criteria require that the facility minimize the availability of food and harborage for disease vectors, and, when necessary, use other means to control disease vectors. Of particular concern are rodents. At facilities which dispose of uncomposted or unprocessed putrescible wastes, an effective means to control rodents may be the application of cover material at the end of each operating day. Other means include composting or processing the waste so as to render it unattractive to rodents, or, generally less desirable but sometimes necessary, using rodenticides or repellants. At some facilities birds and flies are more difficult to control than rodents, but certain practices, such as the application of cover material, can help alleviate these problems. Mosquitos can be controlled by eliminating as much as possible the availability of standing water for breeding, by nonchemical controls such as predatory or reproductive control, and if necessary, by spraying with insecticides or repellants.

Cover material. Cover material serves many purposes: (1) It helps in disease vector and rodent control, (2) it helps contain odor, litter, and air emissions, which enhances esthetics, (3) it lessens the chance and spread of fires, (4) it reduces infiltration of rainwater by increasing runoff and thereby decreases leachate generation and surface and ground water contamination, and (5) it enhances the site appearance and utilization after completion.

Because of the many advantages of cover material, the criteria require the use of cover materials where appropriate for the disposal of "all unshredded, unstabilized, putrescibe wastes." In remote areas, to minimize economic impact, EPA recommends regionalization and operation of disposal sites only on days when equipment is available to apply cover material. Cover material is already a requirement for such wastes in many States.

Landspreading of stabilized and composted wastes, surface impoundments, mining and milling wastes, and certain relatively inert wastes such as construction, demolition, and land clearing debris, generally do not require cover material because the wastes are nonputrescible, relatively stable and inert, or they are impracticable to cover. Because of these exceptions, the various criteria call for periodic application of cover material "where appropriate."

"Periodic application of cover material" is defined in § 257.2(s) as "the application of soil or other suitable material over disposed solid waste at such frequencies and in such a manner as to impede vectors and infiltration of precipitation; reduce and contain odors, fires, and litter; and to enchance the facility's appearance and future utilization." In general, these results can be achieved by covering the site at the end of each day that it is open to re-

ceive wastes. In remote areas, on days when sites are not open, storage bins may be provided for temporary storage of wastes.

SAFETY

Safety hazards include explosive, toxic and asphyxiating gases, fires, bird hazards, and exposure to wastes through uncontrolled access to disposal sites.

Gases. Solid waste disposal sites may produce explosive, toxic, or asphyxiating gases which may accumulate onsite or migrate offsite. Products of solid waste decomposition, oxidation, volatilization, sublimation, or evaporation may include gases such as methane and hydrogen (explosive and asphyxiating), carbon monoxide and carbon dioxide (asphyxiating) and chlorine (toxic). The presence of any of these or similar gases at a disposal site, in sufficient conventration, can pose a serious threat to the health and welfare of site employees and users, and occupants of nearby structures. Explosions, asphyxiations, and poisonings resulting in injury and death have resulted from disposal site gases. In addition, property damage, groundwater contamination, and vegetation destruction onsite and on adjacent lands have been caused by solid waste disposal gases. Measures need to be conscientiously implemented at waste disposal sites to avoid, prevent, or control the formation and migration of these gases.

The criteria call for the use of technology and methods to prevent gas migration offsite and to prevent accumulation in onsite structures in harmful quantities. The measures used to accomplish this are many, and frequently site specific. They may include control of incoming waste materials which may cause problems, location of the site away from occupied structures, design of structures onsite or on adjacent land to prevent migration, construction of barriers to gas migration at the site boundary, and use of vents or gas collection systems. Lateral migration may be impeded by surrounding the disposal site with low-permeability soils or other barrier materials. However, since all materials are somewhat permeable these barriers should be used in conjunction with vents. Vents may consist of gravel or open trenches adjacent to the low-permeability barrier and the use of porous or slotted pipes with or without pumps to stimulate gas flow either for dispersion into the atmosphere, or for concentration, destruction, or utilization, usually by combustion.

The explosive gas criterion is not intended to restrict the construction of gas recovery facilities or the storage of these gases on site in a safe manner.

Fires. This criterion is included to address the impact of fires at a solid waste disposal site beyond the air quality impact of open burning. Circumstances other than intentional burning by the site operator which may lead to fires at a disposal site include: Vandalism, carelessness, spontaneous combusting, and receipt for disposal of solid waste undergoing combustion (e.g., hot ashes). Any fire at a solid waste disposal site poses a threat of property damage and injury or death to site employees, users, and nearby residents. In order to minimize these dangers, site design and operation should address the prevention and control of such fires by: Monitoring wastes received, applying cover material or other suitable means to limit the exposure of flammable material, and providing firefighting equipment to promptly extinguish such fires. Underground fires may become very difficult to extinguish if not attended to immediately.

Bird hazards to aircraft. The most abundant source of information on the bird hazard problem can be found in Federal Aviation Administration (FAA) yearly reports on bird strike incidents, and in FAA advisory circulars: "Bird Hazards to Aircraft" (AC 150/5200-3A, 3/2/72), "Use of Chemical Controls to Repel Flocks of Birds at Airports" (AC 150/5200-8 5/2/68), "Bird Reactions to Scaring Devices" (AC 150/5200-9, 6/26/68), and "Announcing the Availability of International Civil Aviation Organization Airport Services Mannual. DOC-9137-AN/898, Part 3, Bird Control and Reduction" (AC 150/5200-22). A study published by EPA also identifies bird hazards to aircraft: "Bird/Airport Hazards at Airports Near Solid Waste Disposal Sites," Environmental Protection Publication SW-116, EPA, 1974.

These reports show that birds are often attracted to disposal facilities which receive putrescrible wastes, in spite of vector control efforts (compaction and cover of wastes, etc.). When airports are located near such disposal sites, a potential bird hazard (collision threat) to aircraft may exist.

The above studies and observations culminated in the issuance of FAA Order 5200.5, "FAA Guidance Concerning Sanitary Landfills on or Near Airports," dated October 16, 1974. The order states that solid waste disposal facilities have been found by study and observation to be artificial attractants to birds and, therefore, "may be incompatible with safe flight operations" when located in the vicinity of an airport.

The bird hazard criterion incorporates the 3,048 and 1,524 meter restrictions contained in the 1974 FAA order. Disposal facilities outside of these distances but within the conical air space described by Federal Aviation Regulations (FAR) Part 77 are to be reviewed on a case-by-case basis for potential bird hazard.

In regulating, managing, and planning for airports and aircraft operations, the FAA and State and local decision makers should avoid locations and operations which would result in a bird hazard to aircraft due to existing or planned solid waste disposal facilities. The following airport and aircraft locations and operations should be avoided:

(a) Runways used or planned for use by turbojet aircraft and located within 3,048 meters of a solid waste disposal facility.

(b) Runways used or planned for use only by piston-type aircraft and located within 1,524 meters of a solid waste disposal facility.

(c) Location or operation of an airport such that the conical air spaces described by FAR Part 77 and applied to the airport would include a solid waste disposal facility.

(d) Location of an airport such that its runways or approach and departure patterns are situated between a solid waste disposal facility and bird feeding, water, or roosting areas.

Access. Solid waste disposal facilities can cause injury or death to persons at the site. Such causes of harm, which are often easy to minimize, include:

(a) Operation of heavy equipment and haul vehicles;

(b) Hazards associated with the types of waste including sharp objects, pathogens, and toxic, explosive, or flammable materials;

(c) Accidental or intentional fires;

(d) Excavations and earth moving activities.

Potential harm to disposal site personnel can be minimized as a result of proper training, utilization of safety equipment, control of waste types, and other safe practices. The most effective means of minimizing the risk of injury to other persons is by complete prohibition of access to the site by non-users (e.g. by suitable fencing) and strict control of users while on the site. For individuals disposing of small amounts of wastes, storage or special disposal facilities can be provided near the site boundary or away from the area being utilized by professional solid waste management personnel.

The importance of this consideration cannot be overstated since persons have suffered injury and even death at uncontrolled waste disposal facilities. Furthermore, in most cases, there is little economic impact on solid waste disposal operations in accomplishing site access control.

PUBLIC PARTICIPATION

Extensive comments have been received and considered in the development of these proposed Criteria. These comments were submitted by a number of individuals and organiza-

tions in response to: (1) public meetings conducted by EPA (including those listed in 42 FR 6620, Feb. 3, 1977, and public meetings conducted by several EPA Regional Offices), (2) meetings with State solid waste agency personnel, (3) meetings with other groups representing local and regional governments, disposal facility operators, environmental organizations, industrial associations, professional societies, and other groups, (4) the Notice of Intent to Develop Rulemaking (42 FR 9803, Feb. 17, 1977) and the Advance Notice of Proposed Rulemaking (42 FR 34446-48, July 5, 1977), and (5) a working draft of the Criteria which was widely distributed outside EPA to representatives of local and State governments, other Federal agencies, industry, disposal facility operators, the scientific community, environmental organizations, and anyone requesting copies.

The first public hearing on the proposed Criteria will be held on the evening of March 1, 1978, in San Diego, Calif., at the following location:

The Executive Hotel (Terrace Room), 1055 First Avenue, San Diego, Calif. Registration: 7 to 7:30 p.m.

Additional public hearings are planned for late March or early April (following publication in the FEDERAL REGISTER of the notice of availability of the EIS/EIA). Tentative locations are: Washington D.C.; Kansas City, Mo.; and San Francisco, Calif. Notice of these hearings will be published in the FEDERAL REGISTER at least 30 days prior to the hearings. Requests to participate in the public hearings should be directed to: Public Participation Officer, Office of Solid Waste (WH-562), EPA, Washington, D.C. 20460, 202-755-9157. Such requests must be received prior to the close of business (4:30 p.m.) five working days preceding the date of the hearing and must include the names, addresses, and phone numbers of individuals or organizations seeking to make a public statement; the choice of public hearing location; and an estimate of the time required to make the statement. At least one legible copy of the prepared statement must be provided at the time of the public hearing.

EPA desires comments from the general public on these proposed Criteria. EPA is particularly interested in comments on: (1) Adequacy of the Criteria in providing for the protection of public health and the environment, (2) practicality of implementation of the Criteria (including availability of technologies and methods to comply with the Criteria and to determine compliance; and the feasibility of monitoring, administrative, and enforcement programs), (3) potential impacts on segments of our society and economy, and (4) any recommended alternatives.

Dated: January 27, 1978.

DOUGLAS M. COSTLE,
Administrator.

PART 257—CRITERIA FOR CLASSIFICATION OF SOLID WASTE DISPOSAL FACILITIES

Sec.
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AUTHORITY: Sec. 1008(a)(3), sec. 4004(a), Pub. L. 94-580; 90 Stat 2803 and 2815; (42 U.S.C. 6907(a)(3) 6944); sec. 405(d), Pub. L. 95-217.

§ 257.1 Scope and purpose.

(a) These Criteria are for use in determining which solid waste disposal facilities pose no reasonable probability of adverse effects on health or the environment. Facilities failing to meet these Criteria will be considered open dumps for the purposes of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (the Act). Sections 4005(c) and 4003 of the Act prohibit open dumping, and require that such facilities must be closed or upgraded, except for facilities operating on a State-established compliance schedule which specifies an enforceable sequence of actions or operations.

(b) These Criteria also provide guidelines for sludge utilization and disposal, under section 405(d) of the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (Pub. L. 95-217). The owner or operator of any publicly owned treatment works must comply with the Criteria in accordance with section 405(e) of that Act.

(c) These Criteria apply to all *solid waste disposal* facilities as these terms are defined in the Act, with the following exceptions: (1) Facilities for the disposal of hazardous waste must comply with the regulations promulgated under Subtitle C of the Act; (2) regulations for the State Underground Injection Control Program (40 CFR Part 146) developed under authority of the Safe Drinking Water Act of 1974 (Pub. L. 93-523, 88 Stat. 1660 et. seq., 42 U.S.C. 300 et. seq.) will apply to underground well injection in lieu of these Criteria; (3) agricultural wastes, including manures and crop residues, which are returned to the soil as fertilizers or soil conditioners are not subject to classification by these Criteria; and (4) overburden resulting from mining operations, including mining and milling waste, which is returned to the mine is not subject to classification by these Criteria.

§ 257.2 Definitions.

As used in these criteria:

(a) "Aquifer" means a geologic formation, group of formations, or part of a formation that is capable of yielding usable quantities of ground water to wells or springs.

(b) "Base flood" means a flood that has a 1 percent or greater chance of recurring in any year or a flood of a magnitude equalled or exceeded once in 100 years on the average over a significantly long period. In any given 100-year interval such a flood may not occur, or more than one such flood may occur.

(c) "Beneficial utilization" means the application of solid waste to land for the purpose of supplying nutrients or conditioning the soil.

(d) "Cation exchange capacity" means the sum of exchangeable cations a soil can absorb expressed in milliequivalents per 100 grams of soil as determined by the pH 7.0 ammonium acetate procedure (Schollenberger, C.J. and Simon, R.H., "Determination of exchange capacity and exchangeable bases in soil-ammonium acetate method", SOIL SCIENCE, 59: 13-25, 1945).

(e) "Contiguous zone" means the entire zone established or to be established by the United States under article 24 of the Convention of the Territorial Sea and the Contiguous Zone (Pub. L. 92-500, 86 Stat. 836, 33 U.S.C. 1362).

(f) "Discharge of pollutants" means (1) any addition of any pollutant to navigable waters, (2) any addition of any pollutant to the waters of the contiguous zone or the ocean from any source other than a vessel or other floating craft.

(g) "Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters (Pub. L. 94-580, 90 Stat. 2799, 42 U.S.C. 6903).

(h) "Endangerment" means the introduction of any physical, chemical, biological, or radiological substance or matter into ground water in such a concentration that (1) makes it necessary for a ground-water user to increase treatment of the water (including treatment to meet any maximum contaminant level set forth in any promulgated National Primary Drinking Water Standard), (2) makes it necessary for a future user of the ground water to use more extensive treatment of the water than would otherwise have been necessary (based on current

technology), or (3) otherwise makes the water unfit for human consumption.

(i) "Facility" means any land and appurtenances thereto used for the disposal of solid wastes.

(j) "Facility structures" means any buildings and sheds, or utility or drainage lines on the facility.

(k) "Floodplain" means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, which are inundated by the base flood.

(l) "Food chain crops" means tobacco; crops grown for human consumption; and pasture, forage, and feed grain for animals whose products are consumed by humans.

(m) "Ground water" means water below the land surface in the zone of saturation.

(n) "Leachate" means liquid containing dissolved or suspended materials that emerges from solid waste.

(o) "Navigable waters" means the waters of the United States, including the territorial seas (Pub. L. 92-500, 86 Stat. 886, 33 U.S.C. 1362).

(p) "Non-point source" means any origin from which pollutants emanate in an unconfined and unchannelled manner, including but not limited to surface runoff and leachate seeps.

(q) "Open burning" means the combustion of solid waste without (1) control of combustion air to maintain adequate temperature for efficient combustion, (2) containment of the combustion reaction in an enclosed device to provide sufficient residence time and mixing for complete combustion, or (3) control of the emission of the combustion products.

(r) "Open dump" means a site for the disposal of solid waste which does not comply with these Criteria (Pub. L. 94-580, 90 Stat. 2800, 42 U.S.C. 6903).

(s) "Periodic application of cover material" means the application of soil or other suitable material over disposed solid waste at such frequencies and in such a manner as to impede vectors and infiltration of precipitation; reduce and contain odors, fires, and litter; and to enhance the facility's appearance and future utilization.

(t) "Permafrost" means permanently frozen subsoil.

(u) "Pesticide" means (1) any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, and (2) and substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant (Pub. L. 92-516, 86 Stat. 975, 7 U.S.C. 136).

(v) "Point source" means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged (Pub. L. 92-500, 86 Stat. 887, 33 U.S.C. 1362).

(w) "Pollutant" means any substance added to air, land, or water which impairs its chemical, physical, biological, or radiological quality.

(x) "Putrescible wastes" means solid waste which contains organic matter capable of being decomposed by microorganisms and of such a character and proportion as to be capable of attracting or providing food for birds and potential disease vectors (such as rodents and flies).

(y) "Recharge zone" means an area through which water enters an aquifer.

(z) "Sanitary landfill" means a facility for the disposal of solid waste which meets these Criteria (Pub. L. 94-580, 90 Stat. 2800, 42 U.S.C. 6903).

(aa) "Sludge" means any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effects (Pub. L. 94-580, 90 Stat. 2800, 42 U.S.C. 6903).

(bb) "Solid waste" means any garbage, refuse, sludge from a .waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activies, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923). (Pub. L. 94-580, 90 Stat. 2801, 42 U.S.C. 6903.)

(cc) "Stabilization" means any chemical, physical, thermal, or biological treatment process that results in the significant reduction of pathogenic organisms.

(dd) "State" means any of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands. (Pub. L. 94-580, 90 Stat. 2801, 42 U.S.C. 6903.)

(ee) "Wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil condition. Wetlands generally include swamps, marches, bogs, and similar areas. (33 CFR Part 323—Permits for Discharges of Dredged or Fill Material into Waters of the United States.)

§ 257.3 Criteria for classification of solid waste disposal facilities.

For the purposes of classification under Sections 4004(a) and 1008(a)(3) of the Act, a facility for the disposal of solid waste poses no reasonable probability of adverse effects on health, safety, or the environment if it is so located, designed, constructed, operated, completed, and maintained that it meets the following criteria.

§ 257.3-1 Environmentally sensitive areas.

(a) *Wetlands.* The facility shall not be located in a wetland unless:

(1) The facility obtains an NPDES permit under Section 402 of the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500, 86 Stat. 880, 33 U.S.C. 1342), and

(2) If a levee or other type of containment structure is to be placed in the water as part of the disposal activity, the facility obtains a permit issued under authority of Section 404 of the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500, 86 Stat. 884, 33 U.S.C. 1344) according to the Army Corps of Engineers Permits for Discharges of Dredged or Fill Material into Waters of the United States (33 CFR Part 323).

COMMENT.—There is a strong presumption against the issuance of an NPDES permit for the discharge of solid waste into wetland areas. Only upon a showing of extraordinary circumstances—including a demonstration of alternative methods of disposal, an assessment of environmental impact for each alternative, an assessment of the technical and economic feasibility of each alternative, and a justification for the wetlands disposal alternative in view of the environmental impact and feasibility—will an NPDES application be considered and an NPDES permit issued. Any NPDES permit issued for the discharge of solid waste into wetland areas must assure that the facility utilizes appropriate technologies and/or best management practices to minimize any adverse effects.

(b) *Floodplains.* The facility shall not be located in a floodplain unless it is clearly demonstrated that:

(1) The facility will not restrict the flow of the base flood or reduce the temporary water-storage capacity of the floodplain such that increased flooding upsteam or downstream may result from the base flood, and

(2) The facility is designed, constructed, operated, and maintained so as to protect against inundation by the base flood, unless the facility is for land application of solid waste for beneficial utilization as agricultural soil conditioners or fertilizers.

(c) *Permafrost areas.* The facility shall not be located in permafrost areas unless:

(1) Other alternatives such as recycling or salvaging of materials, incineration and energy recovery of combustibles, deep well injection, and transport of the wastes back to more temperate regions are evaluated and determined to be technologically or economically infeasible, and

(2) The facility is sited on relatively dry and workable soils where minimal or no vegetative cover exists, and the facility is designed, constructed, and operated so as to minimize erosion and to minimize surface area consumed, and

(3) Regional disposal facilities are developed to the maximum extent feasible (including technological and economic considerations).

(d) *Critical habitats.* The facility shall not be located in critical habitat areas listed in 50 CFR Part 17, Subpart F: Critical Habitat, 1760 et seq., unless: It is demonstrated that such disposal operation will not jeopardize the continued existence of endangered species, and approval of the disposal plan is obtained from the Office of Endangered Species, Fish and Wildlife Service, Department of Interior.

(e) *Sole source aquifers.* The facility shall not be located in the recharge zone of an aquifer which is the sole or principal source of drinking water for an area designated under Section 1424(e) of the Safe Drinking Water Act of 1974 (Pub. L. 93-523 88 Stat. 1661, 1678, 42 U.S.C. 300f, 300h-3(e)) unless:

(1) Other alternative sites and waste disposal methods have been evaluated and determined to be technologically or economically infeasible.

(2) It is located, designed, constructed, operated, maintained, and monitored to prevent endangerment of the aquifer.

NOTE.—Comments are specifically solicited on the completeness, adequacy, and impact of the environmentally Sensitive Areas criteria.

§ 257.3-2 Surface water.

The facility does not adversely affect surface water quality and complies with the following:

(a) Point source discharge of pollutants, including channelled surface leachate, leachate seepage, surface runoff, and leachate treatment effluent, to off-site surface waters, complies with an NPDES permit issued for the facility according to Section 402 of the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92-500, 86 Stat. 880, 33 U.S.C. 1342).

(b) Non-point sources, including surface leachate, leachate seepage, and surface runoff are controlled so as to prevent or minimize non-point source discharges of pollutants into any off-site surface water.

§ 257.3-3 Ground Water.

The facility does not adversely affect ground water quality in accordance with Case I or Case II below.

(a) *Case I.* (1) For aquifers containing ground water which (i) is currently used or designated by the State for future use as a drinking water supply for human consumption, or (ii) contains less than 10,000 mg/l total dissolved solids and has not received designation pursuant to Case II; the quality of the ground water beyond the disposal facility property boundary is not endangered by the facility.

(2) For aquifers described in paragraph (a)(1) of this section the facility shall employ one of the following two operational means to assure that endangerment of the ground water quality is prevented:

(i) Any leachate produced shall be collected through use of artificial liners. Collected leachate shall be removed, recirculated, or treated as appropriate.

(ii) The facility shall control the migration of leachate by utilizing the site's natural hydrogeologic conditions, soil attenuation mechanisms and/or recovery and treatment of contaminated water. Where appropriate, infiltration of water into the solid waste shall be prevented or minimized so as to reduce leachate generation.

(3) For as long as leachate may enter ground water in such quantities and concentrations that the ground water quality may be endangered, monitoring of ground water, prediction of leachate migration, and a current and acceptable contingency plan for corrective action are required.

(b) *Case II.* (1) For ground water which is currently used or designated by the State for use other than as a drinking water supply for human consumption, the quality of the ground water beyond the disposal facility property boundary is maintained at such quality as specified by the State.

(2) A State may designate a groundwater source for use other than as a drinking water supply for human consumption if:

(i) The source is impractical for use as a drinking water supply due to the extent of its contamination, its depth, or the potential yield of the aquifer; or, after public hearings, it is determined that adequate alternative drinking water supplies are available for all users in the affected area into the foreseeable future, taking into account projected population growth, the extent, location, and nature of existing sources of drinking water, and other potential sources of ground water pollution, and

(ii) The waters of an adjacent State or country will not be endangered and adequate hydrogeologic conditions exist separating the ground water to be designated from waters to be protected so that protected waters are not endangered.

§ 257.3-4 Air.

The facility controls air emissions (including emissions by evaporation, sublimation, and oxidation) so as to comply with all applicable Federal, State, and local air regulations and to protect public health and welfare, and complies with the following prohibitions:

(a) Open burning of residential, commercial, institutional, and industrial solid waste is prohibited.

(b) Open burning of other solid waste (e.g. agricultural and silvicultural) is prohibited unless in compliance with State and local regulations.

§ 257.3-5 Application to land used for the production of food chain crops.

A facility for the beneficial utilization of solid waste by application to land used for the production of food chain crops complies with the following in addition to the other criteria contained in this regulation.

(a) *Cadmium.* Any site that is currently or will in the future be used for the production of food chain crops complies with either subparagraph (1) or subparagraph (2) of this paragraph.

(1) (i) The annual application of cadmium from solid waste does not exceed the maximum additions below.

*Years**	*Maximum annual Cd addition* (kg/ha)*
Present to Dec. 31, 1981	2.0
Jan. 1, 1982 to Dec. 31, 1985	1.25
Beginning Jan. 1, 1986	0.5

*NOTE.—Comments are requested on the public health and environmental implications of this phased approach. Comments are also requested on the ability of locally implemented industrial waste pretreatment programs to reduce solid waste cadmium concentrations to levels which will permit continued land application on food chain crops within the schedule shown.

(ii) The maximum cumulative amount of cadmium applied to any hectare of land does not exceed: 5 kilograms on soils with a Cation Exchange Capacity (CEC) of less than 5, 10 kilograms on soils whose CEC is between 5 and 15, and 20 kilograms on soils whose CEC exceeds 15.

(iii) Solid waste containing cadmium concentrations in excess of 25 mg/kg dry weight is not applied to sites where tobacco, leafy vegetables, or root crops are or will be grown for direct human consumption.

(iv) Solid waste containing cadmium is applied so that the pH of the solid waste and soil mixture is maintained at 6.5 or greater.

(2) The land application of solid waste containing cadmium is acceptable is the resulting level of cadmium in the crops and meats marketed for human consumption are analyzed prior to marketing and shown to be

comparable to those levels present in similar crops or meats produced locally where solid waste has not been applied. A contingency plan is necessary which identifies alternative courses of action which may be taken if crop cadmium levels are not found to be comparable (e.g., restrictions on crop marketing, future land use, and sludge application rates). The contingency plan must also provide adequate safeguards to preclude risks from alternative land uses following the closure of the disposal site. This alternative is only available to those facilities which demonstrate that they possess the necessary resources and expertise to adequately manage and monitor their operations.

(b) *Pathogens.* (1) If solid waste of concern due to its pathogen content is applied directly to the surface of the land it is stabilized to reduce public health hazards.

(2) Land which has received solid waste of concern due to its pathogen content is not used for the production of human food crops which are normally eaten raw (except crops such as orchard fruits, where there is no contact between the solid waste and the crop) for at least one year following application or longer.

(c) *Pesticides and persistent organics.* The application of solid waste containing pesticides on land that is currently or will in the future be used for the production of food chain crops does not result in pesticide residues in or on crops in excess of the tolerances set pursuant to Section 408 of the Federal Food, Drug and Cosmetic Act (FFDCA; 21 U.S.C. 346a) and the regulations thereunder (40 CFR Part 180) and Section 409 of the Federal Food, Drug and Cosmetic Act (FFDCA: 21 U.S.C. 348) and the regulations thereunder (21 CFR Part 561).The application of solid wastes containing persistent organics on land that is currently or will in the future be used for the production of food chain crops does not result in persistent organic levels in or on foods in excess of those established by FDA (21 CFR Part 109).

(d) *Direct ingestion.* Solid waste of concern due to its pathogen, toxic organic or heavy metal content (e.g., lead and PCB) is not applied to a site so that the freshly applied solid waste may be directly ingested by animals raised for milk or by humans.

§ 257.3-6 Disease vectors.

The facility protects public health by controlling disease vectors. This shall be accomplished through minimizing the availability of food and harborage for vectors through the periodic application of cover material or other techniques where appropriate.

§ 257.3-7 Safety.

The facility does not pose a safety hazard to facility employees and users and to the public in accordance with the following:

(a) *Explosive gases.* The concentrations of explosive gases in facility structures (excluding gas control or recovery system components), or in the soil at the facility property boundary do not reach the lower explosive limits for the gases.

(b) *Toxic or asphyxiating gases.* Toxic or asphyxiating gases are not allowed to migrate off site, or accumulate in facility structures (excluding gas control or recovery components) in concentrations harmful to human, animal, or plant life.

(c) *Fires.* All fires are extinguished expeditiously; and fire hazards are minimized through proper site construction and design, and the periodic application of cover material where appropriate.

(d) *Bird hazards to aircraft.* Disposal facilities which receive putrescible wastes that may attract birds are not located (1) within 3,048 meters of any runway used or planned to be used by turbojet aircraft, or (2) within 1,524 meters of any runway used or planned to be used only by piston-type aircraft, unless it is determined that the disposal facility does not pose a bird hazard to aircraft. Determinations shall be made on a case-by-case basis for those facilities which are not within the above distances but are within the conical surfaces described by Federal Aviation Regulations Part 77 as applied to an individual airport.

(e) *Access.* Entry to the facility is controlled so as to minimize exposure of the public to hazards of heavy equipment operation and exposed waste.

§ 257.4 Effective date.

These Criteria become effective 30 days after final publication.

[FR Doc. 78-3151 Filed 2-3-78; 8:45 am]

Illustration XI

(4) That the public interest requires the granting of the requested use as soon as possible.

(b) Notice of any determination made by the Administrator pursuant to paragraph (a) of this section shall be published in the FEDERAL REGISTER as soon as practicable after granting the requested use and shall set forth the basis for the Administrator's determination.

PART 165—REGULATIONS FOR THE ACCEPTANCE OF CERTAIN PESTICIDES AND RECOMMENDED PROCEDURES FOR THE DISPOSAL AND STORAGE OF PESTICIDES AND PESTICIDES CONTAINERS

Subpart A—General

Sec.
165.1 Definitions.
165.2 Authorization and scope.

Subpart B—Acceptance Regulations

165.3 Acceptable pesticides.
165.4 Request for acceptance.
165.5 Delivery.
165.6 Disposal.

Subpart C—Pesticides and Containers

165.7 Procedures not recommended.
165.8 Recommended procedures for the disposal of pesticides.
165.9 Recommended procedures for the disposal of pesticide containers and residues.
165.10 Recommended procedures and criteria for storage of pesticides and pesticide containers.

Subpart D—Pesticide-Related Wastes

165.11 Procedures for disposal and storage of pesticide-related wastes.

AUTHORITY: Secs. 19(a) and 25(a) of the Federal Insecticide, Fungicide, and Rodenticide Act as amended by the Federal Environmental Pesticide Control Act of 1972 (86 Stat. 955, 977), and sec. 204 of the Solid Waste Disposal Act (Pub. L. 89-272 as amended by Pub. L. 91-512).

SOURCE: 39 FR 15236, May 1, 1974, unless otherwise noted.

Subpart A—General

§ 165.1 Definitions.

As used in this part, all terms not defined herein shall have the meaning given them by the Act.

(a) "The Act" means the Federal Insecticide, Fungicide, and Rodenticide Act as amended by the Federal Environmental Pesticide Control Act of 1972 (Pub. L. 92-516, 86 Stat. 973).

(b) "Agency" means the U.S. Environmental Protection Agency.

(c) (1) "Administrator" means the Administrator of the Agency, or any officer or employee thereof to whom authority has been heretofore delegated or to whom authority may hereafter be delegated, to act in his stead.

(2) "Regional Administrator" means the Administrator of a Regional Office of the Agency or his delegatee.

(d) "Adequate storage" means placing of pesticides in proper containers and in safe areas as per § 165.10 as to minimize the possibility of escape which could result in unreasonable adverse effects on the environment.

(e) "Complete destruction" of pesticides means alteration by physical or chemical processes to inorganic forms.

(f) "Container" means any package, can, bottle, bag, barrel, drum, tank, or other containing-device (excluding spray applicator tanks) used to enclose a pesticide or pesticide-related waste.

(g) "Decontamination/detoxification" means processes which will convert pesticides into nontoxic compounds.

(h) "Degradation products" means those chemicals resulting from partial decomposition or chemical breakdown of pesticides.

(i) "Diluent" means the material added to a pesticide by the user or manufacturer to reduce the concentration of active ingredient in the mixture.

(j) "Encapsulate" means to seal a pesticide, and its container if appropriate, in an impervious container made of plastic, glass, or other suitable material which will not be chemically degraded by the contents. This container then should be sealed within a durable container made from steel, plastic, concrete, or other suitable material of sufficient thickness and strength to resist physical damage during and subsequent to burial or storage.

(k) "Heavy metals" means metallic elements of higher atomic weights, including but not limited to arsenic, cadmium, copper, lead, mercury, manganese, zinc, chromium, tin, thallium, and selenium.

(l) "Imminent hazard" means a situation which exists when the continued use of a pesticide during the time required for cancellation proceedings would be likely to result in unreasonable adverse effects on the environment or will involve unreasonable hazard to the survival of a species declared endangered by the Secretary of the Interior under Public Law 91-135.

(m) "Ocean dumping" means the disposal of pesticides in or on the oceans and seas, as defined in P. L. 92-532.

(n) "Open burning" means the combustion of a pesticide or pesticide container in any fashion other than incineration.

(o) "Open dumping" means the placing of pesticides or containers in a land site in a manner which does not protect the environment and is exposed to the elements, vectors, and scavengers.

(p) "Pesticide" means (1) any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or (2) any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant.

(1) "Excess pesticides" means all pesticides which cannot be legally sold pursuant to the Act or which are to be discarded.

(2) "Organic pesticides" means carbon-containing substances used as pesticides, excluding metallo-organic compounds.

(3) "Inorganic pesticides" means non-carbon-containing substances used as pesticides.

(4) "Metallo-organic pesticides" means a class of organic pesticides containing one or more metal or metalloid atoms in the structure.

(q) "Pesticide-related wastes" means all pesticide-containing wastes or by-products which are produced in the manufacturing or processing of a pesticide and which are to be discarded, but which, pursuant to acceptable pesticide manufacturing or processing operations, are not ordinarily a part of or contained within an industrial waste stream discharged into a sewer or the waters of a state.

(r) "Pesticide incinerator" means any installation capable of the controlled combustion of pesticides, at a temperature of 1000°C (1832°F) for two seconds dwell time in the combustion zone, or lower temperatures and related dwell times that will assure complete conversion of the specific pesticide to inorganic gases and solid ash residues. Such installation complies with the Agency Guidelines for the Thermal Processing of Solid Wastes as prescribed in 40 CFR Part 240.

(s) "Safe disposal" means discarding pesticides or containers in a permanent manner so as to comply with these proposed procedures and so as to avoid unreasonable adverse effects on the environment.

(t) "Sanitary landfill" means a disposal facility employing an engineered method of disposing of solid wastes on land in a manner which minimizes environmental hazards by spreading the solid wastes in thin layers, compacting the solid wastes to the smallest practical volume, and applying cover material at the end of each working day. Such facility complies with the Agency Guidelines for the Land Disposal of Solid Wastes as prescribed in 40 CFR Part 241.

(u) "Scrubbing" means the washing of impurities from any process gas stream.

(v) "Soil injection" means the emplacement of pesticides by ordinary tillage practices within the plow layer of a soil.

(w) "Specially designated landfill" means a landfill at which complete long term protection is provided for the quality of surface and subsurface waters from pesticides, pesticide containers, and pesticide-related wastes deposited therein, and against hazard to public health and the environment. Such sites should be located and engineered to avoid direct hydraulic continuity with surface and subsurface waters, and any leachate or subsurface flow into the disposal area should be contained within the site unless treatment is provided. Monitoring wells should be established and a sampling and analysis program conducted. The location of the disposal site should be permanently recorded in the appropriate local office of legal jurisdiction. Such facility complies with the Agency Guidelines for the Land Disposal of Solid Wastes as prescribed in 40 CFR Part 241.

(x) "Triple rinse" means the flushing of containers three times, each time using a volume of the normal diluent equal to approximately ten percent of the container's capacity, and adding the rinse liquid to the spray mixture or disposing of it by a method prescribed for disposing of the pesticide.

(y) "Unreclaimable residues" means residual materials of little or no value remaining after incineration.

(z) "Water dumping" means the disposal of pesticides in or on lakes, ponds, rivers, sewers, or other water systems as defined in P. L. 92-500.

(aa) "Well injection" means disposal of liquid wastes through a hole or shaft to a subsurface stratum.

§ 165.2 Authorization and scope.

(a) The regulations in this part and recommended procedures are published pursuant to sections 19(a) and 25(a) of the Act, which give the Administrator the authority to establish regulations and procedures for the disposal or storage of packages and containers of pesticides, and for disposal or storage of excess amounts of such pesticides, and require the Administrator to accept for safe disposal a pesticide the registration of which is canceled under section 6(c) of the Act if requested by the owner of the pesticide. Section 165.11 of these recommended procedures (Pesticide-Related Wastes) is published pursuant to Section 204 of the Solid Waste Disposal Act (P.L. 89–272 as amended by P.L. 91–512) which authorizes the Administrator to make information available and to make recommendations concerning the disposal and handling of wastes.

(b) Regulations for acceptance for safe disposal of pesticides canceled under section 6(c) and recommended proceprocedures for disposal or storage of pesticides, pesticide containers, and pesticide-related wastes are those which the Administrator judges as necessary, with an adequate margin of safety, to protect public health and the environment. Such procedures are subject to addition and revision as the Administrator deems necessary.

(c) The recommended procedures for the disposal of pesticides and pesticide containers apply to all pesticides, pesticide-related wastes (and their containers) including those which are or may in the future be registered for general use or restricted use, or covered under an experimental use permit, except those single containers discussed in paragraph (e), of this section. These disposal procedures are mandatory only for the Agency in carrying out its pesticide and container disposal operations.

(d) The recommended procedures and criteria for the storage of pesticides and pesticide containers apply to all pesticides and excess pesticides and to used empty containers and containers which contain pesticides. These procedures and criteria apply to sites and facilities where pesticides that are classed as highly toxic or moderately toxic, and bear the signal words DANGER, POISON, or WARNING, or the skull and crossbones symbol, on the label are stored. Pesticides covered by an experimental use permit should also be stored in accordance with these procedures. These storage procedures are mandatory only for the Agency in carrying out its pesticide and container storage operations. Temporary storage by the user of the quantity of pesticide needed for a single application may be undertaken in isolated areas in accordance with the procedures and criteria given in § 165.10(a).

(e) Recommended pesticide and pesticide container disposal procedures shall not apply to containers of pesticides registered for use in the home and garden if securely wrapped in several layers of paper and disposed of singly during routine municipal solid waste disposal, nor to cointainers of pesticides used on farms and ranches where disposal by open-field burial of single containers is undertaken with due regard to the protection of surface and sub-surface waters.

(f) As a general guideline, the owner of excess pesticides should first exhaust the two following avenues before undertaking final disposal:

(1) Use for the purposes originally intended, at the prescribed dosage rates, providing these are currently legal under all Federal, State, and local laws and regulations.

(2) Return to the manufacturer or distributor for potential re-labelling, recovery of resources, or reprocessing into other materials. Transportation must be in accordance with all currently applicable U.S. Department of Transportation regulations, including those prescribed in 49 CFR Parts 170–179 and 397, 46 CFR Part 146, and 14 CFR Part 103. The "for hire" transportation of unregistered pesticides across state lines may be subject to the Interstate Commerce Commission's economic regulations (49 U.S.C. 1 et seq. for rail carriers; 306, 307, and 309 for motor carriers; and 909 for domestic water carriers), and the Commission should be contacted in case of doubt.

NOTE: Some excess pesticides may be suitable for export to a country where use of the pesticide is legal. All pesticides so exported should be in good condition and packed according to specifications of the foreign purchaser, and must be transported to the port of embarkation in accordance with all Department of Transportation regulations. All shipments should be in conformance with section 17(a) of the Act.

(g) To provide documentation of actual situations, all accidents or incidents involving the storage or disposal of pesticides, pesticide containers, or pesticide-related wastes should be reported to the appropriate Regional Administrator.

Subpart B—Acceptance Regulations

§ 165.3 Acceptable pesticides.

The Administrator will accept for safe disposal those pesticides the registrations of which have been canceled, after first having been suspended to prevent an imminent hazard during the time required for cancellation proceedings as specified in section 6(c) of the Act. However, no other pesticides will be accepted pursuant to section 19(a) of the Act, and nothing herein shall obligate the Federal Government to own or operate any disposal facility.

§ 165.4 Request for acceptance.

(a) Before the owner of such a pesticide requests acceptance by the Administrator for disposal, he shall make every reasonable effort to return the material to either its manufacturer, distributor, or to another agent capable of using the material.

(b) If such an effort is unsuccessful, the following procedure shall be used by the owner of a suspended pesticide to request acceptance by the Administrator:

(1) The owner of such a pesticide must make a formal request for acceptance, in writing, to the Regional Administrator for the area where such pesticides are located.

(2) Records and data pertaining to the amount, location, physical form, type and condition of containers, and date of manufacture or purchase of individual lots must be submitted. Certification that the owner of the suspended pesticide has made every reasonable effort to return the material to the manufacturer, distributor of the pesticide, or to other agents capable of re-labeling, recovering, recycling or reprocessing the material and has been refused on the basis of technological infeasibility, must also be submitted.

§ 165.5 Delivery.

If it is found that a canceled pesticide meets the requirements for acceptance, the Regional Administrator will confer with the owner for purposes of arranging a mutually convenient location for acceptance of individual lots of such canceled pesticides. Transportation to the acceptance location will be the responsibility of, and transportation costs will be borne by, the owner of the pesticide.

§ 165.6 Disposal.

Following such acceptance, the Regional Administrator will cause the disposal or storage of such pesticide as appropriate, in accordance with the procedures outlined in subparts A and C of this part.

Subpart C—Pesticides and Containers

§ 165.7 Procedures not recommended.

No person should dispose of or store (or receive for disposal or storage) any pesticide or dispose of or store any pesticide container or pesticide container residue:

(a) In a manner inconsistent with its label or labeling.

(b) So as to cause or allow open dumping of pesticides or pesticide containers.

(c) So as to cause or allow open burning of pesticides or pesticide containers; except, the open burning by the user of small quantities of combustible containers formerly containing organic or metallo-organic pesticides, except organic mercury, lead, cadmium, or arsenic compounds, is acceptable when allowed by State and local regulations.

(d) So as to cause or allow water dumping or ocean dumping, except in conformance with regulations developed pursuant to the National Marine Protection, Research and Sanctuaries Act of 1972 (Pub. L. 92–532), and to Sections 304, 307, and 311 of the Federal Water Pollution Control Act as Amended (Pub. L. 92–500).

(e) So as to violate any applicable Federal or State pollution control standard.

(f) So as to violate any applicable provisions of the act.

§ 165.8 Recommended procedures for the disposal of pesticides.

Recommended procedures for the disposal of pesticides are given below:

(a) Organic pesticides, (except organic mercury, lead, cadmium, and arsenic compounds which are discussed in paragraph (c) of this section) should be disposed of according to the following procedures:

(1) Incinerate in a pesticide incinerator at the specified temperature/dwell time combination, or at such other lower temperature and related dwell time that will cause complete destruction of the pesticide. As a minimum it should be verified that all emissions meet the requirements of the Clean Air Act of 1970 (42 U.S.C. 1857 et seq.) relating to gase-

ous emissions: specifically any performance regulations and standards promulgated under sections 111 and 112 should be adhered to. Any liquids, sludges, or solid residues generated should be disposed of in accordance with all applicable Federal, State, and local pollution control requirements. Municipal solid waste incinerators may be used to incinerate excess pesticides or pesticide containers provided they meet the criteria of a pesticide incinerator and precautions are taken to ensure proper operation.

(2) If appropriate incineration facilities are not available, organic pesticides may be disposed of by burial in a specially designated landfill. Records to locate such buried pesticides within the landfill site should be maintained.

(3) The environmental impact of the soil injection method of pesticide disposal has not been clearly defined nationally, and therefore this disposal method should be undertaken only with specific guidance. It is recommended that advice be requested from the Regional Administrator in the region where the material will be disposed of prior to undertaking such disposal by this method.

(4) There are chemical methods and procedures which will degrade some pesticides to forms which are not hazardous to the environment. However, practical methods are not available for all groups of pesticides. Until a list of such methods is available, it is recommended that advice be requested from the Regional Administrator in the region where the material will be disposed of prior to undertaking disposal by such method.

(5) If adequate incineration facilities, specially designated landfill facilities, or other approved procedures are not available, temporary storage of pesticides for disposal should be undertaken. Storage facilities, management procedures, safety precautions and fire and explosion control procedures should conform to those set forth in § 165.10.

(6) The effects of subsurface emplacement of liquid by well injection and the fate of injection materials are uncertain with available knowledge, and could result in serious environmental damage requiring complex and costly solutions on a long-term basis. Well injection should not be considered for pesticide disposal unless all reasonable alternative measures have been explored and found less satisfactory in terms of environmental protection. As noted in the Administrator's Decision Statement No. 5, dated February 6, 1973, the Agency's policy is to oppose well injection of fluid pesticides "without strict controls and a clear demonstration that such emplacement will not interfere with present or potential use of the subsurface environment, contaminate ground water resources or otherwise damage the environment." Adequate pre-injection tests, provisions for monitoring the operation and the environmental effects, contingency plans to cope with well failures, and provisions for plugging injection wells when abandoned should be made. The Regional Administrator should be advised of each operation.

(b) Metallo-organic pesticides (except organic mercury, lead, cadmium, or arsenic compounds which are discussed in paragraph (c) of this section), should be disposed of according to the following procedures:

(1) After first subjecting such compounds to an appropriate chemical or physical treatment to recover the heavy metals from the hydrocarbon structure, incinerate in a pesticide incinerator as described in paragraph (a)(1) of this section.

(2) If appropriate treatment and incineration are not available, bury in a specially designated landfill as noted in paragraph (a)(2) of this section.

(3) Disposal by soil injection of metallo-organic pesticides should be undertaken only in accordance with the procedure set forth in paragraph (a)(3) of this section.

(4) Chemical degradation methods and procedures that can be demonstrated to provide safety to public health and the environment should be undertaken only as noted in paragraph (a)(4) of this section.

(5) If adequate disposal methods as listed above in this section are not available, the pesticides should be stored according to the procedures in § 165.10 until disposal facilities become available.

(6) Well injection of metallo-organic pesticides should be undertaken only in accordance with the procedures set forth in § 165.8(a)(6).

(c) Organic mercury, lead, cadmium, arsenic, and all inorganic pesticides should be disposed of according to the following procedures:

(1) Chemically deactivate the pesticides by conversion to non-hazardous compounds, and recover the heavy metal

resources. Methods that are appropriate will be described and classified according to their applicability to the different groups of pesticides. Until a list of practical methods is available, however, each use of such procedures should be undertaken only as noted in § 165.8(a)(4).

(2) If chemical deactivation facilities are not available, such pesticides should be encapsulated and buried in a specially designated landfill. Records sufficient to permit location for retrieval should be maintained.

(3) If none of the above options is available, place in suitable containers (if necessary) and provide temporary storage until such time as adequate disposal facilities or procedures are available. The general criteria for acceptable storage are noted in § 165.10.

§ 165.9 Recommended procedures for the disposal of pesticide containers and residues.

(a) *Group I Containers.* Combustible containers which formerly contained organic or metallo-organic pesticides, except organic mercury, lead, cadmium, or arsenic compounds, should be disposed of in a pesticide incinerator, or buried in a specially designated landfill, as noted in § 165.8(a); except that small quantities of such containers may be burned in open fields by the user of the pesticide when such open burning is permitted by State and local regulations, or buried singly by the user in open fields with due regard for protection of surface and sub-surface water.

(b) *Group II Containers.* Non-combustible containers which formerly contained organic or metallo-organic pesticides, except organic mercury, lead, cadmium, or arsenic compounds, should first be triple-rinsed. Containers in good condition may then be returned to the pesticide manufacturer or formulator, or drum reconditioner for reuse with the same chemical class of pesticide previously contained providing such reuse is legal under currently applicable U.S. Department of Transportation regulations including those set forth in 49 CFR 173.28. Other rinsed metal containers should be punctured to facilitate drainage prior to transport to a facility for recycle as scrap metal or for disposal. All rinsed containers may be crushed and disposed of by burial in a sanitary landfill, in conformance with State and local standards or buried in the field by the user of the pesticide. Unrinsed containers should be disposed of in a specially designated landfill, or subjected to incineration in a pesticide incinerator.

(c) *Group III Containers.* Containers (both combustible and noncombustible) which formerly contained organic mercury, lead, cadmium, or arsenic or inorganic pesticides and which have been triple-rinsed and punctured to facilitate drainage, may be disposed of in a sanitary landfill. Such containers which are not rinsed should be encapsulated and buried in a specially designated landfill.

(d) *Residue disposal.* Residues and rinse liquids should be added to spray mixtures in the field. If not, they should be disposed of in the manner prescribed for each specific type of pesticide as set forth in § 165.8.

§ 165.10 Recommended procedures and criteria for storage of pesticides and pesticide containers.

(a) *General.* (1) Pesticides and excess pesticides and their containers whose uncontrolled release into the environment would cause unreasonable adverse effects on the environment should be stored only in facilities where due regard has been given to the hazardous nature of the pesticide, site selection, protective enclosures, and operating procedures, and where adequate measures are taken to assure personal safety, accident prevention, and detection of potential environmental damages. These storage procedures and criteria should be observed at sites and facilities where pesticides and excess pesticides (and their containers) that are classed as highly toxic or moderately toxic and are required to bear the signal words DANGER, POISON, or WARNING, or the skull and crossbones symbol on the label are stored. These procedures and criteria are not necessary at facilities where most pesticides registered for use in the home and garden, or pesticides classed as slightly toxic (word CAUTION on the label) are stored. All facilities where pesticides which are or may in the future be covered by an experimental use permit or other special permit are stored should be in conformance with these procedures and criteria.

(2) Temporary storage of highly toxic or moderately toxic pesticides for the period immediately prior to, and of the quantity required for a single application, may be undertaken by the user at isolated sites and facilities where flooding is unlikely, where provisions are made to

prevent unauthorized entry, and where separation from water systems and buildings is sufficient to prevent contamination by runoff, percolation, or wind-blown particles or vapors.

(b) *Storage sites.* Storage sites should be selected with due regard to the amount, toxicity, and environmental hazard of pesticides, and the number and sizes of containers to be handled. When practicable, sites should be located where flooding is unlikely and where soil texture/structure and geologic/hydrologic characteristics will prevent the contamination of any water system by runoff or percolation. Where warranted, drainage from the site should be contained (by natural or artificial barriers or dikes), monitored, and if contaminated, disposed of as an excess pesticide as discussed in § 165.8. Consideration should also be given to containing wind-blown pesticide dusts or particles.

(c) *Storage facilities.* Pesticides should be stored in a dry, well ventilated, separate room, building or covered area where fire protection is provided. Where relevant and practicable, the following precautions should be taken:

(1) The entire storage facility should be secured by a climb-proof fence, and doors and gates should be kept locked to prevent unauthorized entry.

(2) Identification signs should be placed on rooms, buildings, and fences to advise of the contents and warn of their hazardous nature, in accordance with suggestions given in paragraph (g)(1)(i) of this section.

(3) All items of movable equipment used for handling pesticides at the storage site which might be used for other purposes should be labeled "contaminated with pesticides" and should not be removed from the site unless thoroughly decontaminated.

(4) Provision should be made for decontamination of personnel and equipment such as delivery trucks, tarpaulin covers, etc. Where feasible, a wash basin, and shower with a delayed-closing pull chain valve should be provided. All contaminated water should be disposed of as an excess pesticide. Where required, decontamination area should be paved or lined with impervious materials, and should include gutters. Contaminated runoff should be collected, and treated as an excess pesticide.

(d) *Operational procedures.* Pesticide containers should be stored with the label plainly visible. If containers are not in good condition when received, the contents should be placed in a suitable container and properly relabeled. If dry excess pesticides are received in paper bags that are damaged, the bag and the contents should be placed in a sound container that can be sealed. Metal or rigid plastic containers should be checked carefully to insure that the lids and bungs are tight. Where relevant and practicable, the following provisions should be considered:

(1) *Classification and separation.* (i) Each pesticide formulation should be segregated and stored under a sign containing the name of the formulation. Rigid containers should be stored in an upright position and all containers should be stored off the ground, in an orderly way, so as to permit ready access and inspection. They should be accumulated in rows or units so that all labels are visible, and with lanes to provide effective access. A complete inventory should be maintained indicating the number and identity of containers in each storage unit.

(ii) Excess pesticides and containers should be further segregated according to the method of disposal to ensure that entire shipments of the same class of pesticides are disposed of properly, and that accidental mixing of containers of different categories does not occur during the removal operation.

(2) *Container inspection and maintenance.* Containers should be checked regularly for corrosion and leaks. If such is found, the container should be transferred to a sound, suitable, larger container and be properly labeled. Materials such as adsorptive clay, hydrated lime, and sodium hypochlorite should be kept on hand for use as appropriate for the emergency treatment or detoxification of spills or leaks. (Specific information relating to other spill treatment procedures and materials will be published as it is confirmed.)

(e) *Safety precautions.* In addition to precautions specified on the label and in the labeling, rules for personal safety and accident prevention similar to those listed below should be available in areas where personnel congregate:

(1) *Accident prevention measures.* (i) Inspect all containers of pesticides for leaks before handling them.

(ii) Do not mishandle containers and thereby create emergencies by carelessness.

(iii) Do not permit unauthorized persons in the storage area.

(iv) Do not store pesticides next to food or feed or other articles intended for consumption by humans or animals.

(v) Inspect all vehicles prior to departure, and treat those found to be contaminated.

(2) *Safety measures.* (i) Do not store food, beverages, tobacco, eating utensils, or smoking equipment in the storage or loading areas.

(ii) Do not drink, eat food, smoke, or use tobacco in areas where pesticides are present.

(iii) Wear rubber gloves while handling containers of pesticides.

(iv) Do not put fingers in mouth or rub eyes while working.

(v) Wash hands before eating, smoking, or using toilet and immediately after loading, or transferring pesticides.

(vi) Persons working regularly with organophosphate and N-alkyl carbamate pesticides should have periodic physical examinations, including cholinesterase tests.

(f) *Protective clothing and respirators.* (1) When handling pesticides which are in concentrated form, protective clothing should be worn. Contaminated garments should be removed immediately, and extra sets of clean clothing should be maintained nearby.

(2) Particular care should be taken when handling certain pesticides to protect against absorption through skin, and inhalation of fumes. Respirators or gas masks with proper canisters approved for the particular type of exposure noted in the label directions, should be used when such pesticides are handled.

(g) *Fire control.* (1) Where large quantities of pesticides are stored, or where conditions may otherwise warrant, the owner of stored pesticides should inform the local fire department, hospitals, public health officials, and police department in writing of the hazards that such pesticides may present in the event of a fire. A floor plan of the storage area indicating where different pesticide classifications are regularly stored should be provided to the fire department. The fire chief should be furnished with the home telephone numbers of (i) the person(s) responsible for the pesticide storage facility, (ii) the appropriate Regional Administrator, who can summon the appropriate Agency emergency response team, (iii) the U.S. Coast Guard, and (iv) the Pesticide Safety Team Network of the National Agricultural Chemicals Association.

(2) *Suggestions for Fire Hazard Abatement.* (i) Where applicable, plainly label the outside of each storage area with "DANGER," "POISON," "PESTICIDE STORAGE" signs. Consult with the local fire department regarding the use of the current hazard signal system of the National Fire Protection Association.

(ii) Post a list on the outside of the storage area of the types of chemicals stored therein. The list should be updated to reflect changes in types stored.

(3) *Suggested Fire Fighting Precautions.* (i) Wear air-supplied breathing apparatus and rubber clothing.

(ii) Avoid breathing or otherwise contacting toxic smoke and fumes.

(iii) Wash completely as soon as possible after encountering smoke and fumes.

(iv) Contain the water used in fire fighting within the storage site drainage system.

(v) Fireman should take cholinesterase tests after fighting a fire involving organophosphate or N-alkyl carbamate pesticides, if they have been heavily exposed to the smoke. Baseline cholinesterase tests should be part of the regular physical examination for such firemen.

(vi) Evacuate persons near such fires who may come in contact with smoke or fumes or contaminated surfaces.

(h) *Monitoring.* An environmental monitoring system should be considered in the vicinity of storage facilities. Samples from the surrounding ground and surface water, wildlife, and plant environment, as appropriate, should be tested in a regular program to assure minimal environmental insult. Analyses should be performed according to "Official Methods of the Association of Official Analytical Chemists (AOAC)," and such other methods and procedures as may be suitable.

Subpart D—Pesticide-Related Wastes

§ 165.11 Procedures for disposal and storage of pesticide-related wastes.

(a) In general all pesticide-related wastes should be disposed of as excess pesticides in accordance with the procedures set forth in §§ 165.7 and 165.8. Such wastes should not be disposed of by addition to an industrial effluent stream if not ordinarily a part of or contained within such industrial effluent stream, except as regulated by and in compliance with effluent standards es-

tablished pursuant to sections 304 and 307 of the Federal Water Pollution Control Act as amended.

(b) Pesticide-related wastes which are to be stored should be managed in accordance with the provisions of § 165.10.

PART 166—EXEMPTION OF FEDERAL AND STATE AGENCIES FOR USE OF PESTICIDES UNDER EMERGENCY CONDITIONS

Sec.

166.1 General.
166.2 Types of exemptions.
166.3 Application for specific exemption.
166.4 Application for quarantine—public health exemption.
166.5 Procedure to be followed upon approval of a specific exemption.
166.6 Procedure to be followed after application of a pesticide pursuant to a quarantine—public health exemption.
166.7 Withdrawal of a specific or quarantine—public health exemption.
166.8 Crisis exemptions—procedures to be followed.
166.9 Withdrawal of the crisis exemption.
166.10 Publication.
166.11 Exemption from penalty provisions.

AUTHORITY: Sec. 25 of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended by the Federal Environmental Pesticide Control Act of 1972 (86 Stat. 997).

SOURCE: 38 FR 33305, Dec. 3, 1973, unless otherwise noted.

§ 166.1 General.

Pursuant to section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act, as amended by the Federal Environmental Pesticide Control Act of 1972 (86 Stat. 995), the Administrator may exempt from the requirements of the Act a Federal or State agency if he determines that emergency conditions exist which may require such an exemption. An emergency will be deemed to exist when: (a) A pest outbreak has or is about to occur and no pesticide registered for the particular use, or alternative method of control, is available to eradicate or control the pest, (b) significant economic or health problems will occur without the use of the pesticide, and (c) the time available from discovery or prediction of the pest outbreak is insufficient for a pesticide to be registered for the particular use. In determining whether an emergency condition exists, the Administrator will also give consideration to such additional facts requiring the use of section 18 as are presented by the applicant. Set forth herein are the procedures that Federal or State agencies must follow in requesting such an exemption.

§ 166.2 Types of exemptions.

Consideration will be given to three types of exemptions.

(a) *Specific exemption.* Specific exemptions may be issued by the Administrator in a situation involving the outbreak of a pest in the United States. Such exemptions, if granted, are valid only for the specific situation involved and are subject to such restrictions as the Administrator may prescribe in granting the exemption. Such restrictions may include, among others, limitation on the quantity of the pesticide to be used, the conditions under which the pesticide may be applied, restrictions as to the persons who may apply the pesticide and the type of monitoring activities which should be conducted. Specific exemptions, if granted, are valid only for the time therein specified but under no circumstances shall be longer than one (1) year.

(b) *Quarantine—public health exemption.* Quarantine or public health exemptions may be issued by the Administrator to cover Federal or State programs concerned with preventing the introduction or spread of a foreign pest into or throughout the United States. A foreign pest is a pest not known to occur within the United States, or a pest not previously known to be established within the United States but which has become newly established, or threatens to become established, within the United States. Such exemptions, if granted, are valid only for the time therein specified but under no circumstances shall be longer than one (1) year. The Administrator may, in his discretion, renew such exemption annually upon reapplication. Where pesticide is used under this exemption and recurrence of the pest can be reasonably expected, the Federal or State agency shall take prompt action to comply with the registration requirements of the Act for the particular use. If such request for registration is refused, such pesticide shall not be further used for the particular use under the exemption. No pesticide may be used under a quarantine—public health exemption if the registration of such pesticide has been suspended by the Administrator.

(c) *Crisis exemption.* Crisis exemptions are hereby granted to any Federal or State agency in situations involving the unpredictable outbreak of pests in the United States, where the responsible official in authority determines (1) that there is no readily available pesticide registered for the particular use to eradicate or control the pest and (2) that the time element with respect to the application of the pesticide is so critical that there was no time to request a specific exemption and where the other requirements of § 166.8 are met. Crisis exemptions are not available where the Administrator has specifically withdrawn the right to a crisis exemption: For the use of a pesticide or by an agency. No pesticide which has been suspended or finally cancelled may be used under a crisis exemption for any use prohibited under the suspension or final cancellation order for the product.

§ 166.3 Application for specific exemption.

(a) Each specific exemption must be requested in writing, by the head of the Federal agency or the Governor of the State involved, or other official designee, addressed to the Administrator, setting forth the following information:

(1) The nature, scope and frequency of the emergency.

(2) A description of the pest known to occur, the places or times it may be likely to occur, and the estimated time when treatment must be commenced to be effective.

(3) Whether a pesticide registered for the particular use, or other method of eradicating or controlling the pest, is available to meet the emergency, and the basis for such determination.

(4) A listing of the pesticide or pesticides the agency proposes to use in the event of an outbreak.

(5) Description of the nature of the program for eradication or control. Such description should include:

(i) Quantity of the pesticide expected to be applied;

(ii) Area or place of application;

(iii) Method of application;

(iv) Duration of application;

(v) Qualifications of personnel involved in such application.

(6) Statement of economic benefits and losses anticipated with and without the exemption and under reasonable alternatives.

(7) Analysis of possible adverse effects on man and the environment. If an Environmental Impact Statement has been prepared by an agency, in accordance with that agency's regulations implementing the National Environmental Policy Act of 1969, and is relevant to the above, it shall be submitted with the application.

§ 166.4 Application for quarantine—public health exemption.

(a) Quarantine—public health exemptions must be requested in writing, by the head of the Federal agency or the Governor of the State involved, or their official designee, setting forth the following information:

(1) The scope of the quarantine or public health programs concerned and the statutory authorities therefor.

(2) Whether a pesticide registered for the particular use, or other method of eradicating or controlling the pest, is available to implement the quarantine or public health program, and the basis for such determination.

(3) A listing of the pesticide or pesticides the agency proposes to use for such quarantine or public health program.

(4) A description of the nature of the quarantine or public health program for such eradication or control. Such description should include:

(i) Method of application;

(ii) Area or place of application (if possible);

(iii) Duration of application;

(iv) Qualifications of personnel involved in such application.

(5) Statement with respect to possible adverse effects on man and the environment. If an Environmental Impact Statement has been prepared by an agency, in accordance with that agency's regulations implementing the National Environmental Policy Act of 1969, and is relevant to the above, it shall be submitted with the application.

§ 166.5 Procedure to be followed upon approval of a specific exemption.

The Federal or State agency using or applying a pesticide pursuant to a specific exemption shall thereafter:

(a) Immediately inform the Administrator in writing of the time and place of application of such pesticide.

(b) Record the location, quantity, and extent of use of the pesticide involved and furnish such information to the Administrator within ten (10) days of the termination of said application or use.

(c) Initiate such monitoring activities as may have been specified by the Administrator in granting the exemption.

proved Coastal Zone Management Programs and River Basin Plans.

§ 230.8 Revision.

The provisions of these guidelines will be periodically reviewed by the Administrator in conjunction with the Secretary of the Army pursuant to section 404(b)(1) of the Act. The guidelines may not be modified without approval of the Secretary of the Army and the Administrator. Any proposed revisions, or notice that a review has been completed and no revisions are proposed, will be published in the FEDERAL REGISTER within three years of the date of this initial promulgation or earlier as determined by research results and affirmed by the Administrator in conjunction with the Secretary of the Army.

APPENDIX A

DEFINITIONS FROM 33 CFR 209.120, "PERMITS FOR WORK IN NAVIGABLE WATERS OR OCEAN WATERS"

(1) "Navigable waters of the United States." The term "navigable waters of the United States," is administratively defined to mean waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate commerce landward to their ordinary high water mark and up to the head of navigation as determined by the Chief of Engineers, and also waters that are subject to the ebb and flow of the tide shoreward to their mean high water mark (mean higher high water mark on the Pacific Coast). See 33 CFR 209.260 (ER 1165-2-302) for a more definitive explanation of this term.

(2) "Navigable waters". (i) The term "navigable waters," as used herein for purposes of Section 404 of the Federal Water Pollution Control Act, is administratively defined to mean waters of the United States including the territorial seas with respect to the disposal of fill material and excluding the territorial sea with respect to the disposal of dredged material and shall include the following waters:

(a) Coastal waters that are navigable waters of the United States subject to the ebb and flow of the tide, shoreward to their mean high water mark (mean higher high water mark on the Pacific Coast);

(b) All coastal wetlands, mudflats, swamps, and similar areas that are contiguous or adjacent to other navigable waters. "Coastal wetlands" includes marshes and shallows and means those areas periodically inundated by saline or brackish waters and that are normally characterized by the prevalence of salt or brackish water vegetation capable of growth and reproduction.

(c) Rivers, lakes, streams, and artificial water bodies that are navigable waters of the United States up to their headwaters and landward to their ordinary high water mark.

(d) All artificially created channels and canals used for recreational or other navigational purposes that are connected to other navigable waters, landward to their ordinary high water mark;

(e) All tributaries of navigable waters of the United States up to their headwaters and landward to their ordinary high water mark;

(f) Interstate waters landward to their ordinary high water mark and up to their headwaters;

(g) Intrastate lakes, rivers and streams landward to their ordinary high water mark and up to their headwaters that are utilized:

(1) By interstate travelers for water-related recreational purposes;

(2) For the removal of fish that are sold in intestate commerce;

(3) For industrial purposes by industries in interstate commerce; or

(4) In the production of agricultural commodities sold or transported in interstate commerce;

(h) Freshwater wetlands including marshes, shallows, swamps and, similar areas that are contiguous or adjacent to other navigable waters and that support freshwater vegetation. "Freshwater wetlands" means those areas that are periodically inundated and that are normally characterized by the prevalence of vegetation that requires saturated soil conditions for growth and reproduction; and

(i) those other waters which the District Engineer determines necessitate regulation for the protection of water quality as expressed in the guidelines (40 CFR 230). For example, in the case of intermittent rivers, streams, tributaries, and perched wetlands that are not contiguous or adjacent to navigable waters identified in paragraphs (a)-(h) a decision on jurisdiction shall be made by the District Engineer.

(ii) The following additional terms are defined as follows:

(a) "Ordinary high water mark" with respect to inland fresh water means the line on the shore established by analysis of all daily high waters. It is established at that point on the shore that is inundated 25% of the time and is derived by a flow-duration curve for the particular water body that is based on available water stage data. It may also be estimated by erosion or easily recognized characteristics such as shelving, change in the character of the soil, destruction of terrestrial vegetation or its inability to grow, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area;

(b) "Mean high water mark" with respect to ocean and coastal waters means the line on the shore established by the average of all high tides (all higher high tides on the Pacific Coast). It is established by survey based on available tidal data (preferably averaged over a period of 18.6 years because of the variations in tide). In the absence of

such data, less precise methods to determine the mean high water mark may be used, such as physical markings or comparison of the area in question with an area having similar physical characteristics for which tidal data are already available;

(c) "Lakes" means natural bodies of water greater than five acres in surface area and all bodies of standing water created by the impounding of navigable waters identified in paragraphs (a)-(h), above. Stock watering ponds and settling basins that are not created by such impoundments are not included;

(d) "Headwaters" means the point on the stream above which the flow is normally less than 5 cubic feet per second; provided, however, the volume of flow, point and nonpoint source discharge characteristics of the watershed, and other factors that may impact on the water quality of waters of the United States will be considered in determining this upstream limit; and

(e) "Primary tributaries" means the main stems of tributaries directly connecting to navigable waters of the United States up to their headwaters and does not include any additional tributaries extending off of the main stems of these tributaries.

(3) "Ocean waters". The term "ocean waters," as defined in the Marine Protection, Research, and Sanctuaries Act of 1972 (Pub. L. 92-532), 86 Stat. 1052), means those waters of the open seas lying seaward of the base line from which the territorial sea is measured as provided for in the Convention on the Territorial Sea and the Contiguous Zone (15 UST 1606; TIAS 5639).

(4) "Dredged material". The term "dredged material" means material that is excavated or dredged from navigable waters. The term does not include material resulting from normal farming, silviculture, and ranching activities, such as plowing, cultivating, seeding, and harvesting, for production of food, fiber, and forest products.

(5) "Discharge of dredged material". The term "discharge of dredged material" means any addition of dredged material, in excess of one cubic yard when used in a single or incidental operation, into navigable waters. The term includes, without limitation, the addition of dredged material to a specified disposal site located in navigable waters and the runoff or overflow from a contained land or water disposal area. Discharges of pollutants into navigable waters resulting from the onshore subsequent processing of dredged material that is extracted for any commercial use (other than fill) are not included within this term and are subject to section 402 of the Federal Water Pollution Control Act even though the extraction of such material may require a permit from the Corps of Engineers under section 10 of the River and Harbor Act of 1899.

(6) "Fill material". The term "fill material" means any pollutant used to create fill in the traditional sense of replacing an aquatic area with dry land or of changing the bottom elevation of a water body for any purpose. "Fill material" does not include the following:

(i) Material resulting from normal farming, silviculture, and ranching activities, such as plowing, cultivating, seeding, and harvesting, for the production of food, fiber, and forest products;

(ii) Material placed for the purpose of maintenance, including emergency reconstruction of recently damaged parts of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, and bridge abutments or approaches, and transportation structures;

(iii) Additions to these categories of activities that are not "fill" will be considered periodically and these regulations amended accordingly.

(7) "Discharge of fill material." The term "discharge of fill material" means the addition of fill material into navigable waters for the purpose of creating fastlands, elevations of land beneath navigable waters, or for impoundments of water. The term generally includes, without limitation, the following activities in a navigable water: placement of fill that is necessary to the construction of any structure; the building of any structure or impoundment requiring rock, sand, dirt, or other pollutants for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands, property protection and/or reclamation devices such as riprap, groins, seawalls, breakwalls, and bulkheads and fills; beach nourishment; levees; sanitary landfills; fill for structures such as sewage treatment facilities, intake and outfall pipes associated with power plants, and subaqueous utility lines; and artificial reefs.

SUBCHAPTER I—SOLID WASTES

PART 240—GUIDELINES FOR THE THERMAL PROCESSING OF SOLID WASTES

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240.211–2 Recommended procedures: Design.
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APPENDIX—Recommended Bibliography.

AUTHORITY: Sec. 209(a), Solid Waste Disposal Act of 1965 (Pub. L. 89–272); as amended by the Resource Recovery Act of 1970 (Pub. L. 91–512).

SOURCE: 39 FR 29329, Aug. 14, 1974, unless otherwise noted.

Subpart A—General Provisions

§ 240.100 Scope.

(a) The prescribed guidelines are applicable to thermal processing facilities designed to process or which are processing 50 tons or more per day of municipal-type solid wastes. The application of this capacity criterion will be interpreted to mean any facility designed to process or actually processing 50/24 tons or more per hour. However, the guidelines do not apply to hazardous, agricultural, and mining wastes because of the lack of sufficient information upon which to base recommended procedures.

(b) The requirement sections contained herein delineate minimum levels of performance required of any solid waste thermal processing operation. The recommended procedures sections are presented to suggest preferred methods by which the objectives of the requirements can be realized. The recommended procedures are based on the practice of incineration at large facilities (50 tons per day or more) processing municipal solid waste. If techniques other than the recommended procedures are used or wastes other than municipal wastes are processed, it is the obligation of the facility's owner and operator to demonstrate to the responsible agency in advance by means of engineering calculations, pilot plant data, etc., that the techniques employed will satisfy the requirements.

(c) Thermal processing residue must be disposed of in an environmentally acceptable manner. Where a land disposal facility is employed, it must be in accordance with the Environmental Protection Agency's Guidelines for The Land Disposal of Solid Wastes for both residues from the thermal processing operation and those non-hazardous wastes which cannot be thermally processed for reasons of health, safety, or technological limitation.

(d) Pursuant to section 211 of the Solid Waste Disposal Act, as amended, these guidelines are mandatory for Federal agencies. In addition, they are recommended to State, interstate, regional, and local government agencies for use in their activities.

(e) The guidelines are intended to apply equally to all solid waste generated by Federal agencies, regardless of whether processed or disposed of on or off Federal property; and solid waste generated by non-Federal entities, but processed or disposed of on Federal property. However, in the case of many Federal facilities such as Post Offices, military recruiting stations, and other offices, local community solid waste processing and disposal facilities are utilized, and processing and disposal is not within the management control of the Federal agency. Thus, implementation of the guidelines can be expected only in those situations where the Federal agency is able to exercise direct management control over the processing and disposal operations. However, every effort must be made by the responsible agency, where offsite facilities are utilized, to attain processing and disposal facilities that are in compliance with the guidelines. Where non-Federal generated solid waste is processed and disposed of on Federal land and/or facilities, those facilities and/or sites must be in compliance with these guidelines. Determination of compliance to meet the requirements of the guidelines rests with the responsible agency, and they have the authority to determine how such compliance may occur.

§ 240.101 Definitions.

As used in these guidelines:

(a) "Air": "Overfire air" means air, under control as to quantity and direction, introduced above or beyond a fuel bed by induced or forced draft. "Underfire air" means any forced or induced air, under control as to quantity and direction, that is supplied from beneath and which passes through the solid wastes fuel bed.

(b) "Bottom ash" means the solid material that remains on a hearth or falls off the grate after thermal processing is complete.

(c) "Combustibles" means materials that can be ignited at a specific temperature in the presence of air to release heat energy.

(d) "Design capacity" means the weight of solid waste of a specified gross calorific value that a thermal processing facility is designed to process in 24 hours of continuous operation; usually expressed in tons per day.

(e) "Discharge" means water-borne pollutants released to a receiving stream directly or indirectly or to a sewerage system.

(f) "Emission" means gas-borne pollutants released to the atmosphere.

(g) "Facility" means all thermal processing equipment, buildings, and grounds at a specific site.

(h) "Fly ash" means suspended particles, charred paper, dust, soot, and other partially oxidized matter carried in the products of combustion.

(i) "Free moisture" means liquid that will drain freely by gravity from solid materials.

(j) "Furnace" means the chambers of the combustion train where drying, ignition, and combustion of waste material and evolved gases occur.

(k) "Grate siftings" means the materials that fall from the solid waste fuel bed through the grate openings.

(l) "Gross calorific value" means heat liberated when waste is burned completely and the products of combustion are cooled to the initial temperature of the waste. Usually expressed in British thermal units per pound.

(m) "Hazardous waste" means any waste or combination of wastes which pose a substantial present or potential hazard to human health or living organisms because such wastes are nondegradable or persistent in nature or because they can be biologically magnified, or because they can be lethal, or because they may otherwise cause or tend to cause detrimental cumulative effects.

(n) "Incineration" means the controlled process which combustible solid, liquid, or gaseous wastes are burned and changed into noncombustible gases.

(o) "Incinerator" means a facility consisting of one or more furnaces in which wastes are burned.

(p) "Infectious waste" means: (1) Equipment, instruments, utensils, and fomites of a disposable nature from the rooms of patients who are suspected to have or have been diagnosed as having a communicable disease and must, therefore, be isolated as required by public health agencies; (2) laboratory wastes such as pathological specimens (e.g., all tissues, specimens of blood elements, excreta, and secretions obtained from patients or laboratory animals) and disposable fomites (any substance that may harbor or transmit pathogenic organisms) attendant thereto; (3) surgical

operating room pathologic specimens and disposable fomites attendant thereto and similar disposable materials from outpatient areas and emergency rooms.

(q) "Municipal solid wastes" means normally, residential and commercial solid wastes generated within a community.

(r) "Open burning" means burning of solid wastes in the open, such as in an open dump.

(s) "Open dump" means a land disposal site at which solid wastes are disposed of in a manner that does not protect the environment, are susceptible to open burning, and are exposed to the elements, vectors, and scavengers.

(t) "Plans" means reports and drawings, including a narrative operating description, prepared to describe the facility and its proposed operation.

(u) "Residue" means all the solids that remain after completion of thermal processing, including bottom ash, fly ash, and grate siftings.

(v) "Responsible agency" means the organizational element that has the legal duty to ensure that owners, operators, or users of facilities comply with these guidelines.

(w) "Sanitary Landfill" means a land disposal site employing an engineered method of disposing of solid wastes on land in a manner that minimizes environmental hazards by spreading the solid wastes in thin layers, compacting the solid wastes to the smallest practical volume, and applying and compacting cover material at the end of each operating day.

(x) "Sludge" means the accumulated semiliquid suspension of settled solids deposited from wastewaters or other fluids in tanks or basins. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows or other common water pollutants.

(y) "Solid wastes" means garbage, refuse, sludges, and other discarded solid materials resulting from industrial and commercial operations and from community activities. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows or other common water pollutants.

(z) "Special wastes" means nonhazardous solid wastes requiring handling other than that normally used for municipal solid waste.

(aa) "Thermal processing" means processing of waste material by means of heat.

(bb) "Vector" means a carrier, usually an arthropod, that is capable of transmitting a pathogen from one organism to another.

Subpart B—Requirements and Recommended Procedures

§ 240.200 Solid wastes accepted.

§ 240.200–1 Requirement.

In consultation with the responsible agencies, the owner/operator shall determine what wastes shall be accepted and shall identify any special handling required. In general, only wastes for which the facility has been specifically designed shall be accepted; however, other wastes may be accepted if it has been demonstrated to the responsible agency that they can be satisfactorily processed within the design capability of the facility or after appropriate facility modifications.

§ 240.200–2 Recommended procedures: Design.

(a) In addition to the residential and commercial wastes normally processed at municipal-scale incinerators, certain special wastes might be considered for processing. These include: Certain bulky wastes (e.g., combustible demolition and construction debris, tree stumps, large timbers, furniture, and major appliances), digested and dewatered sludges from waste water treatment facilities, raw sewage sludges, and septic tank pumpings.

(b) If the facility is designed to handle special wastes, special areas should be provided where appropriate for storage while they await processing.

§ 240.200–3 Recommended procedures: Operations.

(a) Storage areas for special wastes should be clearly marked.

(b) Facility personnel should be thoroughly trained in any unusual handling required by acceptance of Special Wastes.

§ 240.201 Solid wastes excluded.

§ 240.201–1 Requirement.

Using information provided to them by the waste generator/owner, the responsible agency and the facility owner/operator shall jointly determine specific wastes to be excluded and shall identify them in the plans. The generator/owner of excluded wastes shall consult with the responsible agency in determining an alternative method of disposal for excluded wastes. The criteria used in considering whether a waste is unacceptable shall include the facility's capabilities, alternative methods available, the chemical and biological characteristics of the waste, environmental and health effects, and the safety of personnel. Disposal of pesticides and pesticide containers shall be consistent with the Federal Environmental Pesticides Control Act of 1972 (Pub. L. 92–516) and recommended procedures promulgated thereunder.

§ 240.201–2 Recommended procedures: Design.

(a) Provision for storing, handling, and removing hazardous or excluded wastes inadvertently left at the facility should be considered in design.

(b) Examples of wastes which should be considered for exclusion from the facility include: Hazardous wastes, very large carcasses, automobile bodies, dewatered sludges from water treatment plants, and industrial process wastes.

§ 240.201–3 Recommended procedures: Operations.

(a) Regular users of the facility should be given a list of excluded materials. The list should also be displayed prominently at the facility entrance. If a regular user persists in making unacceptable deliveries, he should be barred from the installation and reported to the responsible agency.

(b) The operating plan should specify the procedures and precautions to be taken if unacceptable wastes are delivered to the facility or are improperly left there. Operating personnel should be thoroughly trained in such procedures.

§ 240.202 Site selection.

§ 240.202–1 Requirement.

Site selection and utilization shall be consistent with public health and welfare, and air and water quality standards and adaptable to appropriate land-use plans.

§ 240.202–2 Recommended procedures: Design.

(a) Whenever possible, thermal processing facilities should be located in areas zoned for industrial use and having adequate utilities to serve the facility.

(b) The site should be accessible by permanent roads leading from the public road system.

(c) Environmental factors, climatological conditions, and socioeconomic factors should be given full consideration as selection criteria.

§ 240.202–3 Recommended procedures: Operations.

Not applicable.

§ 240.203 General design.

§ 240.203–1 Requirement.

A plan for the design of new facilities or modifications to existing facilities shall be prepared or approved by a professional engineer. A list of major considerations and the rationale for the decision on each consideration shall be approved by the responsible agency prior to authorization for construction. This information shall remain available for review.

§ 240.203–2 Recommended procedures: Design.

(a) The types, amounts (by weight and volume), and characteristics of all solid wastes expected to be processed should be determined by survey and analysis. The gross calorific value of the solid wastes to be processed should be determined to serve as a basis for design.

(b) Resource recovery in the form of heat utilization or direct recovery of materials should be considered in the design.

(c) The facility should be designed to be compatible with the surrounding area, easy to maintain, and consistent with the land use of the area.

(d) Employee convenience facilities and plant maintenance facilities should be provided. Adequate lighting should be provided throughout the facility.

(e) The corrosive and erosive action of once-through and recirculated process waters should be controlled either by treating them or by using materials capable of withstanding the adverse effects of the waters.

(f) Facility design capacity should consider such items as waste quantity

and characteristics, variations in waste generation, equipment downtime, and availability of alternate storage, processing, or disposal capability.

(g) Facility systems and subsystems should be designed to assure standby capability in the event of breakdown. Provision for standby water and power should also be considered.

(h) Instrumentation should be provided to determine such factors as: The weight of incoming and outgoing materials (the same scale system may be used for both); total combustion airflow rates; underfire and overfire airflows and the quantitative distribution of each; selected temperatures and pressures in the furnace, along gas passages, in the particluate collection device, and in the stack; electrical power and water consumption of critical units; and rate of operation. The smoke density, the concentration of carbon monoxide, or the concentration of hydrocarbons in the stack gases should be monitored. Measurement of the pH should be considered for effluent waters. Continuously recording instrumentation should be used as much as possible.

(i) Audible signals should be provided to alert operating personnel of critical operating unit malfunctions.

(j) Sampling capability should be designed into the facility so that each process stream can be sampled, and the utilities required to do so should be close at hand. The sampling sites should be so designed that personnel can sample safely without interfering with normal plant operations.

(k) A laboratory should be included in the design, or provision should be made for laboratory analyses to be performed by an outside source acceptable to the responsible agency.

§ 240.203–3 Recommended procedures: Operations.

Not applicable.

§ 240.204 Water quality.

§ 240.204–1 Requirement.

All waters discharged from the facility shall be sufficiently treated to meet the most stringent of applicable water quality standards, established in accordance with or effective under the provisions of the Federal Water Pollution Control Act, as amended.

§ 240.204–2 Recommended procedures: Design.

(a) Effluent waters should not be discharged indiscriminately. Consideration should be given to onsite treatment of process and waste waters before discharge.

(b) Recirculation of process waters should be considered.

§ 240.204–3 Recommended procedures: Operations.

(a) When monitoring instrumentation indicates excessive discharge contamination, appropriate adjustments should be made to lower the concentrations to acceptable levels.

(b) In the event of an accidental spill, the local regulatory agency should be notified immediately.

§ 240.205 Air quality.

§ 240.205–1 Requirement.

Emissions shall not exceed applicable existing emission standards established by the U.S. Environmental Protection Agency (as published in Parts 52, 60, 61 and 76 of this chapter) under the authority of the Clean Air Act, as amended, or State or local emission standards effective under that Act, if the latter are more stringent.

§ 240.205–2 Recommended procedures: Design.

(a) These requirements should be met by using appropriate air pollution control technology.

(b) All emissions, including dust from vents, should be controlled.

§ 240.205–3 Recommended procedures: Operations.

When monitoring instrumentation indicates excessive emissions, appropriate adjustments should be made to lower the emission to acceptable levels.

§ 240.206 Vectors.

§ 240.206–1 Requirement.

Conditions shall be maintained that are unfavorable for the harboring, feeding, and breeding of vectors.

§ 240.206–2 Recommended procedures: Design.

Thermal processing facilities should be designed for ease of cleaning. Areas favorable for breeding of vectors should be avoided.

§ 240.206–3 Recommended procedures: Operations.

(a) A housekeeping schedule should be established and maintained. As a minimum the schedule should provide for cleaning the tipping and residue areas as spillages occur, emptying the solid waste storage area at least weekly, and routinely cleaning the remainder of the facility.

(b) Solid waste and residue should not be allowed to accumulate at the facility for more than one week.

§ 240.207 Aesthetics.

§ 240.207–1 Requirement.

The incinerator facility shall be designed and operated at all times in an aesthetically acceptable manner.

§ 240.207–2 Recommended procedures: Design.

The facility should be designed so that it is physically attractive. The tipping, residue discharge, and waste salvage areas should be screened from public view, and the grounds should be landscaped.

§ 240.207–3 Recommended procedures: Operations.

(a) A routine housekeeping and litter removal schedule should be established and implemented so that the facility regularly presents a neat and clean appearance.

(b) Solid wastes that cannot be processed by the facility should be removed from the facility at least weekly. Open burning or open dumping of this material should be prohibited.

§ 240.208 Residue.

§ 240.208–1 Requirement.

Residue and other solid waste products resulting from a thermal process shall be disposed of in an environmentally acceptable manner. Where land disposal is employed, practices must be in conformance with the U.S. Environmental Protection Agency's Guidelines for the Land Disposal of Solid Wastes. Unwanted residue materials remaining after the recovery operation shall be disposed of in a manner which protects the environment. Where land disposal is employed, practices must be in conformance with the U.S. Environmental Protection Agency's Guidelines for the Land Disposal of Solid Wastes.

§ 240.208–2 Recommended procedures: Design.

Thermal processing facilities should be so designed as to allow for removal from the site of residue or other solids in a manner that protects the environment.

§ 240.208–3 Recommended procedures: Operations.

(a) The furnace operator should visually observe the quality of the bottom ash at least twice per shift and record in the operating log the estimated percentage of unburned combustibles.

(b) If residue or fly ash is collected in a wet condition, it should be drained of free moisture. Transportation of residue and fly ash should be by means that prevent the loads from sifting, falling, leaking, or blowing from the container.

§ 240.209 Safety.

§ 240.209–1 Requirement.

Incinerators shall be designed, operated, and maintained in a manner to protect the health and safety of personnel associated with the operation of the facility. Pertinent provisions of the Occupational Safety and Health Act of 1970 (Pub. L. 91-596) and regulations promulgated thereunder shall apply.

§ 240.209–2 Recommended procedures: Design.

(a) Attention should be given to the safety of operators and vehicles through the provision of safety devices.

(b) Fire control equipment should be provided.

(c) Methods and/or equipment for removal of an injured person from the storage pit should be available.

§ 240.209–3 Recommended procedures: Operations.

(a) Detailed procedures should be developed for operation during such emergency situations as power failure, air or water supply failure, equipment breakdowns, and fire. These procedures should be posted in prominent locations, implemented by the staff as required, and upgraded and revised periodically.

(b) Approved respirators or self-contained breathing apparatus should be available at convenient locations. Their use should be reviewed periodically with facility personnel. Information on this type equipment can be obtained from the Appalachian Laboratory for Occu-

pational Respiratory Disease, National Institute for Occupational Safety and Health, Morgantown, West Virginia.

(c) Training in first aid practices and emergency procedures should be given all personnel.

(d) Personal safety devices such as hard hats, gloves, safety glasses, and footwear should be provided for facility employees.

(e) If a regular user or employee persistently poses a safety hazard he should be barred from the facility and reported to the responsible agency.

§ 240.210 General operations.

§ 240.210–1 Requirement.

The thermal processing facility shall be operated and maintained in a manner that assures it will meet the design requirements. An operations manual describing the various tasks to be performed, operating procedures, and safety precautions for various areas of the facility shall be developed and shall be readily available for reference by plant personnel.

§ 240.210–2 Recommended procedures: Design.

Not applicable.

§ 240.210–3 Recommended procedures: Operations.

(a) The facility supervisor should be experienced in the operation of the type of facility designed or, in the case of an innovated design, be adequately trained by responsible personnel in the operation of the facility.

(b) Alternate and standby disposal and operating procedures should be established for implementation during emergencies, air pollution episodes, and shutdown periods.

(c) Upon completion of facility construction, provision should be made for instruction of the staff in proper operation and maintenance procedures.

(d) A routine maintenance schedule should be established and followed.

(e) As-built engineering drawings of the facility should be provided at the conclusion of construction of the facility. These should be updated to show modifications by the owner as changes are made and should be readily available. A schematic showing the relationships of the various subsystems should also be available.

(f) Key operational procedures should be prominently posted.

(g) Equipment manuals, catalogs, spare parts lists, and spare parts should be readily available at the facility.

(h) Training opportunities for facility operating personnel should be provided.

§ 240.211 Records.

§ 240.211–1 Requirement.

The owner/operator of the thermal processing facility shall provide records and monitoring data as required by the responsible agency.

§ 240.211–2 Recommended procedures: Design.

Continuously recording instrumentation should be used as much as possible.

§ 240.211–3 Recommended procedures: Operations.

(a) Extensive monitoring and record-keeping should be practiced during the first 12 to 18 months of operation of a new or renovated facility, during periods of high air pollution, and during periods of upset conditions at the facility.

(b) During other periods of more normal operation of the facility, less extensive monitoring and record keeping may be practiced if approved by the responsible agency.

(c) Operating records should be kept in a daily log and should include as a minimum:

(1) The total weight and volume (truck capacities may be used for volume determination) of solid waste received during each shift, including the number of loads received, the ownership or specific identity of delivery vehicles, the source and nature of the solid wastes accepted.

(2) Furnace and combustion chamber temperatures recorded at least every 60 minutes and as changes are made, including explanations for prolonged, abnormally high and low temperatures.

(3) Rate of operation, such as grate speed.

(4) Overfire and underfire air volumes and pressure and distribution recorded at least every 60 minutes and as changes are made.

(5) Weights of bottom ash, grate siftings, and fly ash, individually or combined, recorded at intervals appropriate to normal facility operation.

(6) Estimated percentages of unburned material in the bottom ash.

(7) Water used on each shift for bottom ash quenching and scrubber operation. Representative samples of process waters should be collected and analyzed as recommended by the responsible agency.

(8) Power produced and utilized each shift. If steam is produced, quality, production totals and consumption rates should be recorded.

(9) Auxiliary fuel used each shift.

(10) Gross calorific value of daily representative samples of bottom ash, grate siftings, and fly ash. (Sampling time should be varied so that all shifts are monitored on a weekly basis.)

(11) Emission measurements and laboratory analyses required by the responsible agency.

(12) Complete records of monitoring instruments.

(13) Problems encountered and methods of solution.

(d) An annual report should be prepared which includes at least the following information:

(1) Minimum, average, and maximum daily volume and weight of waste received and processed, summarized on a monthly basis.

(2) A summary of the laboratory analyses including at least monthly averages.

(3) Number and qualifications of personnel in each job category; total manhours per week; number of State certified or licensed personnel; staffing deficiencies; and serious injuries, their cause and preventive measures instituted.

(4) An identification and brief discussion of major operational problems and solutions.

(5) Adequacy of operation and performance with regard to environmental requirements, the general level of housekeeping and maintenance, testing and reporting proficiency, and recommendations for corrective actions.

(6) A copy of all significant correspondence, reports, inspection reports, and any other communications from enforcement agencies.

(e) Methodology for evaluating the facility's performance should be developed. Evaluation procedures recommended by the U.S. Environmental Protection Agency should be used whenever possible (see bibliography).

Appendix—Recommended Bibliography

1. The Solid Waste Disposal Act as amended; Title II of Public Law 89–272, 89th Cong., S. 306, Oct. 20, 1965; Pub. L. 91–512, 91st Cong., H.R. 11833, Oct. 26, 1970. Washington, U.S. Government Printing Office, 1971. 14 p. Reprinted 1972.

2. Seven incinerators; evaluation, discussions, and authors' closure. [Washington, U.S. Environmental Protection Agency, 1971. 40 p.] (Includes discussions and authors' closure for "An evaluation of seven incinerators" by W. C. Achinger and L. E. Daniels.)

3. DeMarco, J., D. J. Keller, J. Leckman, and J. L. Newton. Municipal-scale incinerator design and operation. Public Health Service Publication No. 2012. Washington, U.S. Government Printing Office, 1973. 98 p.

4. Occupational Safety and Health Act of 1970; Pub. L. 91–596, 91st Cong., S. 2193, Dec. 29, 1970. Washington, U.S. Government Printing Office, 1972.

5. Control techniques for particulate air pollutants. Publication AP–51. U.S. Department of Health, Education, and Welfare, National Air Pollution Control Administration, 1969.

6. Zausner, E. R. An accounting system for incinerator operations. Public Health Service Publication No. 2032. Washington, U.S. Government Printing Office, 1970. 17 p.

7. Achinger, W. C., and J. J. Glar, Testing manual for solid waste incinerators. [Cincinnati], U.S. Environmental Protection Agency, 1973. [372 p., loose-leaf.] [Open-file report, restricted distribution.]

8. Nader, J. S., W. Carter, and F. Jaye. Performance Specifications for Stationary Source Monitoring Systems. NTIS PB. 230 934/AS (1974).

PART 241—GUIDELINES FOR THE LAND DISPOSAL OF SOLID WASTES

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APPENDIX—Recommended Bibliography.

AUTHORITY: Sec. 209(a) of the Solid Waste Disposal Act of 1965 (Pub. L. 89–272) as amended by the Resource Recovery Act of 1970 (Pub. L. 91–512).

SOURCE: 39 FR 29333, Aug. 14, 1974, unless otherwise noted.

Subpart A—General Provisions

§ 241.100 Scope.

(a) The guidelines are generally applicable to the land disposal of all solid waste materials. However, the guidelines do not apply to hazardous, agricultural, and mining wastes because of the lack of sufficient information upon which to base recommended procedures. Concerning the specific practice of land disposal of milled solid wastes, EPA guidance is contained in a position statement issued in November 1972.

(b) The requirement sections contained herein delineate minimum levels of performance required of any solid waste land disposal site operation. The recommended procedures sections are presented to suggest preferred methods by which the objectives of the requirements can be realized.[1] The recommended procedures are based on the practice of sanitary landfilling municipal solid waste: Normally, residential, and commercial solid waste generated within a community. Sanitary landfilling is the most widely applied environmentally acceptable land disposal method. If techniques other than the recommended procedures are used, or wastes other than municipal solid wastes are disposed, it is the obligation of the proposed facility's owner and operator to demonstrate to the responsible agency in advance by means of engineering calculations and data that the techniques employed will satisfy the requirements.

(c) Pursuant to section 211 of the Solid Waste Disposal Act, as amended, these guidelines are mandatory for Federal agencies. In addition, they are recommended to State, interstate, regional, and local government agencies for use in their activities.

(d) These guidelines are intended to provide for environmentally acceptable land disposal site operations. The guidelines do not establish new standards but set forth requirements and recommended procedures to ensure that the design, construction, and operation of both existing and future land disposal sites meet the health and environmental standards for the area in which they are located. The guidelines are intended to apply equally to all solid waste generated by Federal agencies, regardless of whether processed or disposed of on or off Federal property; and solid waste generated by non-Federal entities, but processed or disposed of on Federal property. However, in the case of many Federal facilities such as Post Offices, military recruiting stations, and other offices, local community solid waste processing and disposal facilities are utilized, and processing and disposal is not within the management control of the Federal agency. Thus, implementation of the guidelines can be expected only in those situations where the Federal agency is able to exercise direct management control over the processing and disposal operations. However, every effort must be made by the responsible agency, where offsite facilities are utilized, to attain processing and disposal facilities that are in compliance with the guidelines. Where non-Federal generated solid waste is processed and disposed of on Federal land and/or facilities, those facilities and/or sites must be in compliance with these guidelines. Determination of compliance to meet the requirements of the guidelines rests with the responsible agency, and they have the authority to determine how such compliance may occur.

[39 FR 29333, Aug. 14, 1974; 40 FR 5159, Feb. 4, 1975]

[1] Further guidance may be found in the EPA publication, "Sanitary Landfill Design and Operation," which served as a basis for the development of these guidelines.

§ 241.101 Definitions.

As used in these guidelines:

(a) "Cell" means compacted solid wastes that are enclosed by natural soil or cover material in a land disposal site.

(b) "Cover material" means soil or other suitable material that is used to cover compacted solid wastes in a land disposal site.

(c) "Daily cover" means cover material that is spread and compacted on the top and side slopes of compacted solid waste at least at the end of each operating day in order to control vectors, fire, moisture, and erosion and to assure as aesthetic appearance.

(d) "Final cover" means cover material that serves the same functions as daily cover but, in addition, may be permanently exposed on the surface.

(e) "Free moisture" means liquid that will drain freely by gravity from solid materials.

(f) "Groundwater" means water present in the saturated zone of an aquifer.

(g) "Hazardous wastes" means any waste or combination of wastes which pose a substantial present or potential hazard to human health or living organisms because such wastes are nondegradable or persistent in nature or because they can be biologically magnified, or because they can be lethal, or because they may otherwise cause or tend to cause detrimental cumulative effects.

(h) "Infectious waste" means: (1) Equipment, instruments, utensils, and fomites of a disposable nature from the rooms of patients who are suspected to have or have been diagnosed as having a communicable disease and must, therefore, be isolated as required by public health agencies; (2) laboratory wastes, such as pathological specimens (e.g. all tissues, specimens of blood elements, excreta, and secretions obtained from patients or laboratory animals) and disposable fomites (any substance that may harbor or transmit pathogenic organisms) attendant thereto; (3) surgical operating room pathologic specimens and disposable fomites attendant thereto and similar disposable materials from outpatient areas and emergency rooms.

(i) "Intermediate cover" means cover material that serves the same functions as daily cover, but must resist erosion for a longer period of time, because it is applied on areas where additional cells are not to be constructed for extended periods of time.

(j) "Leachate" means liquid that has percolated through solid waste and has extracted dissolved or suspended materials from it.

(k) "Municipal solid wastes" means normally, residential, and commercial solid waste generated within a community.

(l) "Open burning" means burning of solid wastes in the open, such as in an open dump.

(m) "Open dump" means a land disposal site at which solid wastes are disposed of in a manner that does not protect the environment, is susceptible to open burning, and is exposed to the elements, vectors, and scavengers.

(n) "Plans" means reports and drawings, including a narrative operating description, prepared to describe the land disposal site and its proposed operation.

(o) "Residue" means all the solids that remain after completion of thermal proc-

essing, including bottom ash, fly ash, and grate siftings.

(p) "Responsible agency" means the organizational element that has the legal duty to ensure that owners, operators or users of land disposal sites comply with these guidelines.

(q) "Runoff" means the portion of precipitation that drains from an area as surface flow.

(r) "Salvaging" means the controlled removal of waste materials for utilization.

(s) "Sanitary landfill" means a land disposal site employing an engineered method of disposing of solid wastes on land in a manner that minimizes environmental hazards by spreading the solid wastes in thin layers, compacting the solid wastes to the smallest practical volume, and applying and compacting cover material at the end of each operating day.

(t) "Scavenging" means uncontrolled removal of solid waste materials.

(u) "Sludge" means the accumulated semiliquid suspension of settled solids deposited from wastewaters or other fluids in tanks or basins. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows or other common water pollutants.

(v) "Solid wastes" means garbage, refuse, sludges, and other discarded solid materials resulting from industrial and commercial operations and from community activities. It does not include solids or dissolved material in domestic sewage or other significant pollutants in water resources, such as silt, dissolved or suspended solids in industrial wastewater effluents, dissolved materials in irrigation return flows or other common water pollutants.

(w) "Vector" means a carrier, usually an arthropod, that is capable of transmitting a pathogen from one organism to another.

(x) "Water table" means the upper water level of a body of groundwater.

(y) "Working face" means that portion of the land disposal site where solid wastes are discharged and are spread and compacted prior to the placement of cover material.

Subpart B—Requirements and Recommended Procedures

§ 241.200 Solid wastes accepted.

§ 241.200–1 Requirement.

In consultation with the responsible agencies the owner/operator shall determine what wastes shall be accepted and shall identify any special handling required. In general, only wastes for which the facility has been specifically designed shall be accepted; however, other wastes may be accepted if it has been demonstrated to the responsible agency that they can be satisfactorily disposed with the design capability of the facility or after appropriate facility modifications.

§ 241.200–2 Recommended procedures: Design.

The plans should specify the procedures to be employed for wastes requiring special handling.

§ 241.200–3 Recommended procedures: Operations.

(a) Routine sanitary landfill techniques of spreading and compacting solid wastes and placing cover material at the end of each operating day should be used to dispose of municipal solid wastes.

(b) Certain bulky wastes, such as automobile bodies, furniture, and appliances may be salvaged in a controlled manner at a point other than the working face. Otherwise, they should be crushed on solid ground and then pushed onto the working face near the bottom of the cell. Other bulky items, such as demolition and construction debris, tree stumps, and large timbers, should be pushed onto the working face near the bottom of the cell.

(c) Procedures for disposing of dead animals have been established by law in most States, and the operation should comply accordingly. In most cases, small carcasses should be placed on the working face with other municipal solid wastes and covered immediately. In the absence of applicable State laws, large carcasses should be placed in a pit and provided with a cover of compacted soil or other suitable material to encourage runoff of precipitation.

(d) Water treatment plant sludges containing no free moisture and digested or heat treated waste water treatment plant sludges containing no free moisture should be placed on the working face along with municipal solid wastes and covered with soil or municipal solid wastes. The quantities accepted should be determined by operational problems encountered at the working face.

(e) Incinerator and air pollution control residues containing no free moisture should be incorporated into the working face and covered at such intervals as necessary to prevent them from becoming airborne.

§ 241.201 Solid wastes excluded.

§ 241.201–1 Requirement.

Using information supplied by the waste generator/owner, the responsible agency and the disposal site owner/operator shall jointly determine specific wastes to be excluded and shall identify them in the plans. The generator/owner of excluded wastes shall consult with the responsible agency in determining an alternative method of disposal for excluded wastes. The criteria used in considering whether a waste is unacceptable shall include the hydrogeology of the site, the chemical and biological characteristics of the waste, alternative methods available, environmental and health effects, and the safety of personnel. Disposal of pesticides and pesticide containers shall be consistent with the Federal Environmental Pesticides Control Act of 1972 (Pub. L. 92–516) and recommended procedures and regulations promulgated thereunder.

§ 241.201–2 Recommended procedures: Design.

Under certain circumstances it may be necessary to accept special wastes at land disposal sites. The following special wastes require specific approval of the responsible agency for acceptance at the site: Hazardous wastes, infectious institutional wastes, bulk liquids and semi-liquids, sludges containing free moisture, highly flammable or volatile substances, raw animal manure, septic tank pumpings, raw sewage sludge, and certain industrial process wastes. Where the use of the disposal site for such wastes is planned, a special assessment is required of the following items: The site characteristics, nature and quantities of the waste, and special design and operations precautions to be implemented to insure environmentally safe disposal.

§ 241.201–3 Recommended procedures: Operations.

Regular users of the land disposal site should be provided with a list of the materials to be excluded. The list should also be displayed prominently at the site entrance. If a regular user persists in making unacceptable deliveries, he should be barred from the site and reported to the responsible agency.

§ 241.202 Site selection.

§ 241.202–1 Requirement.

Site selection and utilization shall be consistent with public health and welfare, and air and water quality standards and adaptable to appropriate land-use plan.

§ 241.202–2 Recommended procedures: Design.

(a) The hydrogeology of the site should be evaluated in order to design site development in a manner to protect or minimize the impact on groundwater resources. Unacceptable hydrogeologic conditions may be altered to render the site acceptable, but all alterations should be detailed in the plans. Precipitation, evapotranspiration, and other climitological conditions should be considered in site selection and design.

(b) Characteristics of on-site soil should be evaluated with respect to their effects on site operations, such as vehicle maneuverability and use as cover material.

(c) Environmental factors, climatological conditions, and socioeconomic factors should be given full consideration as selection criteria.

(d) The site should be accessible to vehicles which the site is designed to serve by all-weather roads leading from the public road system; temporary roads should be provided as needed to deliver wastes to the working face.

(e) The site should not be located in an area where the attraction of birds would pose a hazard to low-flying aircraft.

§ 241.202–3 Recommended procedures: Operations.

Not Applicable.

§ 241.203 Design.

§ 241.203–1 Requirement.

Plans for the design, construction, and operation of new sites or modifications to existing sites shall be prepared or approved by a professional engineer. The plans shall be submitted to the responsible agency for review and, if warranted, approval.

§ 241.203–2 Recommended procedures: Design.

(a) The types and quantities of all solid wastes expected to be disposed of at the facility should be determined by survey and analysis to form a basis for design.

(b) Site development plans should be prepared or approved by a professional engineer and should include: The various design factors addressed elsewhere in the guidelines, as well as:

(1) Initial and final topographies at contour intervals of 5 feet or less.

(2) Land use and zoning within one-quarter mile of the site including location of all residents, buildings, wells, water courses, arroyos, rock outcroppings, roads, and soil or rock borings. All airports within the vicinity of the site should be identified to aid in assessing the potential hazard of birds to aircraft.

(3) Location of all utilities within 500 feet of the site.

(4) Employee convenience and equipment maintenance facilities.

(5) Narrative descriptions, with associated drawings, indicating site development and operation procedures.

(c) Plans should describe the projected use of the completed land disposal site. In addition to maintenance programs and provisions, where necessary, for monitoring and controlling decomposition gases and leachate, the plans should address the following ultimate use criteria:

(1) *Cultivated area.* The major concern if the completed site is to be cultivated is that the integrity of the final cover not be disturbed by agricultural cultivation activities. In this regard, a sufficient depth of cover material to allow cultivation and to support vegetation should be applied in addition to that recommended for final cover.

(2) *Structures.* It is not recommended practice to construct major structures on a completed land disposal site. If major structures are to be built near a completed land disposal site, a professional engineer should approve their design and construction including provision for protection against potential hazards of solid waste decomposition gases.

§ 241.203–3 Recommended procedures: Operations.

Not applicable.

§ 241.204 Water quality.

§ 241.204–1 Requirement.

The location, design, construction, and operation of the land disposal site shall conform to the most stringent of applicable water quality standards established in accordance with or effective under the provisions of the Federal Water Pollution Control Act, as amended. In the absence of such standards, the land disposal site shall be located, designed, constructed and operated in such a manner as to provide adequate protection to ground and surface waters used as drinking water supplies.

§ 241.204–2 Recommended procedures: Design.

(a) Plans should include:

(1) Current and projected use of water resources in the potential zone of influence of the land disposal site.

(2) Groundwater elevation and movement and proposed separation between the lowest point of the lowest cell and the predicted maximum water table elevation.

(3) Potential interrelationship of the land disposal site, local aquifers, and surface waters based on historical records or other sources of information.

(4) Background and initial quality of water resources in the potential zone of influence of the land disposal site.

(5) Proposed location of observation wells, sampling stations, and testing program planned, when appropriate.

(6) Description of soil and other geologic material to a depth adequate to allow evaluation of the water quality protection provided by the soil and other geologic material.

(7) Provision for surface water runoff control to minimize infiltration and erosion of cover material.

(8) Potential of leachate generation and proposed control systems, where necessary, for the protection of ground and surface water resources.

(b) If a land disposal site is located in a flood plain, it should be protected against at least the 50-year design flood by impervious dikes and other appropriate means to prevent the floodwaters from contacting municipal solid waste.

§ 241.204–3 Recommended procedures: Operations.

(a) Surface water courses and runoff should be diverted from the land disposals site (especially from the working face) by means such as trenches, conduits, and proper grading. The land disposal site should be constructed and graded so as to promote rapid surface water runoff without excessive erosion. Regrading should be done as required during construction and after completion to avoid ponding of precipitation and to maintain cover material integrity.

(b) Siltation or retention basins or other approved methods of retarding runoff should be used where necessary to avoid stream siltation or flooding problems due to excessive runoff.

(c) Leachate collection and treatment systems should be used where necessary to protect ground and surface water resources.

(d) Municipal solid wastes and leachate therefrom should not be allowed to contact ground or surface water so as to impair the water's use.

§ 241.205 Air quality.

§ 241.205–1 Requirement.

The design, construction, and operation of the land disposal site shall conform to applicable ambient air quality standards and source control regulations established under the authority of the Clean Air Act, as amended, or State or local standards effective under that Act, if the latter are more stringent.

§ 241.205–2 Recommended procedures: Design.

Plans should include an effective dust control program.

§ 241.205–3 Recommended procedures: Operations.

(a) Open burning of municipal solid waste should be prohibited.

(b) Dust control measures should be initiated as necessary to protect the health and safety of facility personnel, nearby residents, and persons using the facility.

§ 241.206 Gas control.

§ 241.206–1 Requirement.

Decomposition gases generated within the land disposal site shall be controlled on site, as necessary, to avoid posing a hazard to occupants of adjacent property.

§ 241.206–2 Recommended procedures: Design.

Plans should assess the need for gas control and indicate the location and design of any vents, barriers, or other control measures to be provided.

§ 241.206–3 Recommended procedures: Operations.

(a) Decomposition gases should not be allowed to migrate laterally from the land disposal site to endanger occupants of adjacent properties. They should be vented to the atmosphere directly through the cover material, cutoff trenches, or ventilation systems in such a way that they do not accumulate in explosive or toxic concentrations, especially within structures. (Information on the limits of flammability of gases is available in such references as the "Handbook of Chemistry and Physics," 54th ed. CRC Press, Inc., Cleveland, 1973.)

(b) Decomposition gases should not be allowed to concentrate in a manner that will pose an explosion or toxicity hazard.

§ 241.207 Vectors.

§ 241.207–1 Requirement.

Conditions shall be maintained that are unfavorable for the harboring, feeding, and breeding of vectors.

§ 241.207–2 Recommended procedures: Design.

Plans should include contingency programs for vector control, and the operator should be prepared at all times to implement those procedures.

§ 241.207–3 Recommended procedures: Operations.

Vector control contingency programs should be implemented when necessary to prevent or rectify vector problems.

§ 241.208 Aesthetics.

§ 241.208–1 Requirement.

The land disposal site shall be designed and operated at all times in an aesthetically acceptable manner.

§ 241.208–2 Recommended procedures: Design.

Plans should include an effective litter control program.

§ 241.208–3 Recommended procedures: Operations.

(a) Portable litter fences or other devices should be used in the immediate vicinity of the working face and at other appropriate locations to control blowing litter. At the end of each operating day, or more often as required, litter should be removed from the fences and incorporated into the cell being used. Al-

ternatively, the litter may be containerized for disposal on the next operating day.

(b) Wastes that are easily moved by wind should be covered, as necessary, to prevent their becoming airborne and scattered.

(c) On-site vegetation should be cleared only as necessary. Natural windbreaks, such as green belts, should be maintained where they will improve the appearance and operation of the land disposal site. Buffer strips should be planted and/or berms constructed as necessary to screen the working force from nearby residences or major roadways.

(d) Salvage operations should be conducted in such a manner as to not detract from the appearance of the land disposal site. Salvaged material should be removed from the land disposal site frequently enough to maintain aesthetic acceptability.

§ 241.209 Cover material.

§ 241.209–1 Requirement.

Cover material shall be applied as necessary to minimize fire hazards, infiltration of precipitation, odors, and blowing litter; control gas venting and vectors; discourage scavenging; and provide a pleasing appearance.

§ 241.209–2 Recommended procedures: Design.

Plans should specify:

(a) Cover material sources and soil classifications (Unified Soil Classification System or U.S. Department of Agriculture Classification System).

(b) Surface grades and side slopes needed to promote maximum runoff, without excessive erosion, to minimize infiltration.

(c) Procedures to promote vegetative growth as promptly as possible to combat erosion and improve appearance of idle and completed areas.

(d) Procedures to maintain cover material integrity, e.g., regarding and recovering.

§ 241.209–3 Recommended procedures: Operations.

(a) Daily cover should be applied regardless of weather; sources of cover material should, therefore, be accessible on all operating days. The thickness of the compacted daily cover should not be less than 6 inches.

(b) Intermediate cover should be applied on areas where additional cells are not to be constructed for extended periods of time; normally, one week to one year. The thickness of the compacted intermediate cover should not be less than 1 foot.

(c) Final cover should be applied on each area as it is completed or if the area is to remain idle for over one year. The thickness of the compacted final cover should not be less than 2 feet.

§ 241.210 Compaction.

§ 241.210–1 Requirement.

In order to conserve land disposal site capacity, thereby preserving land resources, and to minimize moisture infiltration and settlement, municipal solid waste and cover material shall be compacted to the smallest practicable volume.

§ 241.210–2 Recommended procedures: Design.

(a) Arrangements should be made and indicated in the plans whereby substitute equipment will be available to provide uninterrupted service during routine equipment maintenance periods or equipment breakdowns.

(b) An equipment maintenance facility should be provided onsite, or appropriate contract arrangements should be made to receive such service.

(c) Equipment manuals, catalogs, and spare parts lists should be compiled and readily available onsite.

§ 241.210–3 Recommended procedures: Operations.

(a) Municipal solid waste handling equipment should on any operating day be capable of performing the following functions:

(1) Spread the solid waste accepted in layers no more than 2 feet thick while confining it to the smallest practicable area;

(2) Compact the spread solid wastes to the smallest practicable volume (several such compacted layers will form a cell); and

(3) Place, spread, and compact the cover material over the cell at least by the end of each day's operation.

(b) A preventive maintenance program should be employed to maintain equipment in operating order.

(c) An operating manual describing the various tasks that must be performed during a typical shift should be available to employees for reference.

§ 241.211 Safety.

§ 241.211–1 Requirement.

The land disposal site shall be designed, constructed, and operated in such a manner as to protect the health and safety of personnel associated with the operation. Pertinent provisions of the Occupational Safety and Health Act of 1970 (Pub. L. 91-596) and regulation promulgated thereunder shall apply.

§ 241.211–2 Recommended procedures: Design.

A manual describing safety precautions and procedures to be employed should be developed.

§ 241.211–3 Recommended procedures: Operations.

(a) A safety manual should be available for use by employees, and they should be instructed in application of its procedures.

(b) Personal safety devices such as hard hats, gloves, safety glasses, and footwear should be provided to facility employees.

(c) Safety devices, including but not limited to such items as rollover protective structures, seatbelts, audible reverse warning devices, and fire extinguishers should be provided on all equipment used to spread and compact solid wastes or cover material at the facility.

(d) Provisions should be made to extinguish any fires in wastes being delivered to the site or which occur at the working face or within equipment or personnel facilities.

(e) Communications equipment should be available on site for emergency situations.

(f) Scavenging should be prohibited at all times to avoid injury and to prevent interference with site operations.

(g) Access to the site should be controlled and should be by established roadways only. The site should be accessible only when operating personnel are on duty. Large containers may be placed at the site entrance so that users can conveniently deposit waste after hours. The containers and the areas around them should be maintained in a sanitary and litter-free condition.

(h) Traffic signs or markers should be provided to promote an orderly traffic pattern to and from the discharge area, maintain efficient operating conditions, and, if necessary, restrict access to hazardous areas. Drivers of manually discharging vehicles should not hinder operation of mechanically discharging vehicles. Vehicles should not be left unattended at the working face or along traffic routes. If a regular user persistently poses a safety hazard, he should be barred from the site and reported to the responsible agency.

§ 241.212 Records.

§ 241.212–1 Requirement.

The owner/operator of the land disposal site shall maintain records and monitoring data to be provided, as required, to the responsible agency.

§ 241.212–2 Recommended procedures: Design.

Where appropriate, plans should prescribe methods to be used in maintaining records and monitoring the environmental impact of the land disposal site. Information on recording and monitoring requirements should be obtained from the responsible agency.

§ 241.212–3 Recommended procedures: Operations.

(a) Records should be maintained covering at least the following:

(1) Major operational problems, complaints, or difficulties.

(2) Qualitative and quantitative evaluation of the environmental impact of the land disposal site, with regard to the effectiveness of gas and leachate control, including results of: (i) Leachate sampling and analyses; (ii) gas sampling and analyses; (iii) ground and surface water quality sampling and analyses upstream and downstream of the site.

(3) Vector control efforts.

(4) Dust and litter control efforts.

(5) Quantitative measurements of the solid wastes handled. This should be accomplished through routine or periodic utilization of scales and topographic surveys of the site.

(6) Description of solid waste materials received, identified by source of materials.

(b) Upon completion of the site, a detailed description, including a plat, should be recorded with the area's land recording authority. The description should include general types and locations of wastes, depth of fill, and other information of interest to potential landowners.

APPENDIX—RECOMMENDED BIBLIOGRAPHY

1. Banta, J., et al. Sanitary landfill; manual of engineering practices, No. 39. American Society of Civil Engineers, 1959.

2. Black, C. A., D. D. Evans, J. L. White, L. E. Ensminger, F. E. Clark, and R. C. Dinauer, EDS. Methods of soil analysis. Pt. 1. Physical and mineralogical properties, including statistics of measurement and sampling. Madison, Wis., American Society of Agronomy, Inc., 1965.

3. Black, R. J. Sanitary landfill . . . an answer to a community problem; a route to a community asset. Public Health Service Publication No. 1012. Washington, U.S. Government Printing Office, 1970. [8 p.].

4. Bjornson, B. F., H. D. Pratt, and K. S. Littig. Control of domestic rats & mice. Public Health Service Publication No. 563. Washington, U.S. Government Printing Office, 1956. Revised 1960, 1968. Reprinted [Bureau of Solid Waste Management] 1970. 41 p.

5. Brashares, W. C., and R. M. Golden. Occupational Safety and Health Act. Special bulletin. Washington, National Solid Wastes Management Association, 1972.

6. Brunner, D. R., S. J. Hubbard, D. J. Keller, and J. L. Newton. Closing open dumps. Washington, U.S. Government Printing Office, 1971. 19 p. Reprinted 1972.

7. Brunner, D. R., and D. J. Keller. Sanitary landfill design and operation. Washington, U.S. Government Printing Office, 1972. 59 p.

8. Sorg, T. J., and H. L. Hickman, Jr. Sanitary landfill facts. 2d ed. Public Health Service Publication No. 1792. Washington, U.S. Government Printing Office, 1970. 30 p. Reprinted 1971.

9. Occupational Safety and Health Act of 1970; Public Law 91–596, 91st Cong., S. 2193, Dec. 29, 1970. Washington, U.S. Government Printing Office, 1970.

10. The Solid Waste Disposal Act as amended; Title II of Public Law 89–272, 89th Cong., S. 306, Oct. 20, 1965; Public Law 91–512, 91st Cong., H.R. 11833, Oct. 26, 1970. Washington, U.S. Government Printing Office, 1971. 14 p. Reprinted 1972.

11. Zausner, E. R. An accounting system for sanitary landfill operations. Public Health Service Publication No. 2007. Washington, U.S. Government Printing Office, 1969. 18 p.

12. Federal Environment Pesticides Control Act of 1972; Public Law 92–516, 92d Cong., H.R. 10729, Oct. 21, 1972. Washington, U.S. Government Printing Office, 1972.

13. Handbook of chemistry and physics. 54th ed., Cleveland, CRC Press, Inc., 1973.

PART 243—GUIDELINES FOR THE STORAGE AND COLLECTION OF RESIDENTIAL, COMMERCIAL, AND INSTITUTIONAL SOLID WASTE

Subpart A—General Provisions

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243.204–1 Requirement.
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Appendix—Recommended Bibliography

Authority: Sec. 209(a) of the Solid Waste Disposal Act of 1965 (Pub. Law 89–272), as amended by the Resource Recovery Act of 1970 (Pub. Law 91–512).

Source: 41 FR 6769, Feb. 13, 1976, unless otherwise noted.

Subpart A—General Provisions

§ 243.100 Scope.

(a) These guidelines are promulgated in partial fulfillment of section 209(a) of the Solid Waste Disposal Act, as amended, (Public Law 89–272).

(b) The guidelines apply to the collection of residential, commercial, and institutional solid wastes and street wastes. Explicitly excluded are mining, agricultural, and industrial solid wastes; hazardous wastes; sludges; construction and demolition wastes; and infectious wastes.

(c) The "Requirement" sections contained herein delineate minimum levels of performance required of solid waste collection operations. Under section 211 of the Solid Waste Disposal Act, as amended, and Executive Order 11752, the "Requirement" sections of these guidelines are mandatory for Federal agencies. In addition, they are recommended to State, interstate, regional, and local governments for use in their activities.

(d) The "Recommended procedures" sections are presented to suggest additional actions or preferred methods by which the objectives of the requirements can be realized. The "Recommended procedures" are not mandatory for Federal agencies.

(e) The guidelines apply equally to Federal agencies generating solid waste whether the solid waste is actually collected by a Federally operated or non-Federally operated collection system, except in the case of isolated Federal facilities such as post offices, military recruiting stations, and other offices where local community solid waste collection systems are utilized, which are not within the managerial control of the Federal agency.

(f) The guidelines shall be implemented in those situations where the Federal agency is able to exercise direct managerial control over the collection system through operation of the system or by contracting for collection service. Where non-Federal collection systems are utilized, service contracts should require conformance with the guideline requirements unless service meeting such requirements is not reasonably available. It is left to the head of the responsible agency to decide how the requirements of the guidelines will be met.

(g) The Environmental Protection Agency will give technical assistance and other guidance to Federal agencies when requested to do so under section 3(D)1 of Executive Order 11752.

(h) Within 1 year after the final promulgation of these guidelines, Federal agencies shall decide what actions shall be taken to adopt the requirements of these guidelines and shall, within 60 days of this decision, submit to the Administrator a schedule of such actions.

(i) Federal agencies that decide not to adopt the requirements contained herein, for whatever reason, shall make available to the Administrator a report of the analysis and rationale used in making that decision. The Administrator shall publish notice of availability of this report in the Federal Register. EPA considers the following reasons to be valid for purposes of non-compliance: costs so high as to render compliance economically impracticable, and the technical inhibitions to compliance specifically described in the guidelines.

(1) The following points are to be covered in the report.

(i) A description of the proposed or on-going practices which will not be in compliance with these guidelines. This statement should identify all agency facilities which will be affected by non-compliance including a brief description of how such facilities will be affected.

(ii) A description of the alternative actions considered with emphasis on those alternatives which, if taken, would be in compliance with these guidelines.

(iii) The rationale for the action chosen by the agency including technical data and policy considerations used in arriving at this decision.

In covering these points, agencies should make every effort to present the information succinctly in a form easily understood, but in sufficient detail so that the Administrator and the public may understand the factors influencing the decision not to adopt the requirements of these guidelines.

(2) The report shall be submitted to the Administrator as soon as possible after a final agency decision has been made not to adopt the requirements of these guidelines, but in no case later than 60 days after the final decision. The Administrator will indicate to the agency his concurrence/nonconcurrence with the agency's decision, including his reasons.

(3) Implementation of actions not in compliance with these guidelines shall be deferred, where feasible, in order to give the Administrator time to receive, analyze, and seek clarification of the required report.

(4) It is recommended that where the report on non-compliance concerns an action for which an Environmental Impact Statement (EIS) is required by the National Environmental Policy Act, that the report be circulated simultaneously with the EIS, since much of the information to satisfy the requirements of the report will be useful in the preparation of the EIS.

§ 243.101 Definitions.

As used in these guidelines:

(a) "Alley collection" means the collection of solid waste from containers placed adjacent to or in an alley.

(b) "Agricultural solid waste" means the solid waste that is generated by the rearing of animals, and the producing and harvesting of crops or trees.

(c) "Bulky waste" means large items of solid waste such as household appliances, furniture, large auto parts, trees, branches, stumps, and other oversize wastes whose large size precludes or complicates their handling by normal solid waste collection, processing, or disposal methods.

(d) "Carryout collection" means collection of solid waste from a storage area proximate to the dwelling unit(s) or establishment.